North/Middle Beach Transit Study
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Prepared by:

Gannett Fleming

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1. Introduction and Project Purpose

The City of Miami Beach conducted this study to identify a transit service that would be customized to the unique needs of the A1A – Collins Avenue/Indian Creek Drive corridor along the eastern side of the city. While A1A is currently served by a dozen Miami-Dade Transit routes, the service best serves trips between Miami Beach and destinations elsewhere in Miami-Dade County. Only two routes traverse the length of the corridor between 71st Street and South Beach; other routes cover portions of that length and then connect with the rest of the county across Biscayne Bay. Traveling by bus within the city along the A1A corridor is therefore more complicated and less convenient than would otherwise be expected.

Existing service stops at numerous, closely-spaced bus stops. The increased convenience of a shorter walk to and from the bus stops may be offset by the longer travel times for passengers once on the bus. The configuration of service on Miami Beach may not facilitate the direct links within the City and therefore generally will not offer the "one-seat ride" that would be desirable for travelers in the corridor.

The proposed service would be uniquely configured to serve the high rise condominiums, apartment buildings, and hotels for which transit travel is a voluntary alternative to travel by private automobile. Generally, auto ownership and household income in the corridor is high suggesting considerable discretion in mode choice for residents and visitors. In addition, the service would carry residents and visitors to non-work destinations: restaurants, entertainment venues, and shopping rather than to places of employment. While the service could also carry workers to jobs, the existing MDT service suffices and this proposed service could offer additional options for work trips.

1.1 Description of Corridor

The study corridor extends from 71st Street in North Beach to 17th Street in South Beach. It traverses A1A, both Collins Avenue and Indian Creek Drive where these two roads form a one-way pair. The study corridor includes the east-west roads of 71st Street, 41st Street, and 17th Street as follows:

- 71st Street/Normandy Drive, a one-way pair of streets, from Rue Notre Dame to Indian Creek Drive (for eastbound/southbound travel) and Collins Avenue (for northbound/westbound travel).
- 41st Street/40th Street from Chase Avenue to Pine Tree Drive, and 41st Street across Indian Creek to Indian Creek Drive (for eastbound/northbound travel) and Collins Avenue (for westbound/southbound travel).
- 17th Street from Collins Avenue to Alton Road.

Figure 1-1 on the following page shows the study area.

Figure 1-1 - Project Study Area

The corridor encompasses some of the highest density residential and several significant commercial areas within the city. As shown in Figure 1-2- Land Use in the Study Corridor, the land use along the length of A1A is comprised of high density residential property with a scattering of medium density residential and municipal uses. This area includes several large hotels including the Fontainebleau, Eden Roc, and others, which for land use purposes are included as high density residential. 71st, 41st, and 17th Streets area filled with commercial uses. 71st and 41st Streets contain mostly restaurants and smaller retail establishments while 17th Street is more varied and includes the Convention Center District and City Hall. Just south of 17th Street is Lincoln Road Mall, a pedestrian street containing primarily retail establishments and restaurants.

The substantial concentration of residential, including hotel land paired with the commercial districts on the major east-west streets within the corridor would suggest a natural synergy that could be connected with a local circulator bus service.

1.2 Overview of Existing Transit Service

The A1A corridor is currently served by eleven MDT bus routes. One of the Mid-North Beach Connections operates just west of A1A, along Pine Tree Drive/LaGorce Drive and Alton Road. Weekday headways vary along A1A but are less than 10 minutes along all segments. The South Beach Local, a twelfth route, runs along 17th Street and touches A1A between 23rd and 21st Streets.

Table 1-1 - Existing Weekday Service Frequency in the Study Corridor

Weekday Route	AM Headway (minutes)	Midday Headway (minutes)	PM Headway (minutes)	AM Buses/Hour	Midday Buses/Hour	PM Buses/Hour
62*	32	n/a	36	2	n/a	2
79	24	n/a	22	3	n/a	3
115	45	45	50	1	1	1
117	45	45	53	1	1	1
120	13	12	13	5	5	5
123	22	13	15	3	5	4
150	30	30	30	2	2	2
A*	24	45	36	3	1	2
C	20	20	21	3	3	3
H	24	24	26	3	3	2
J	20	29	25	3	2	2
L	6	7	6	10	9	10
M	43	57	51	1	1	1
S	12	12	12	5	5	5

*- Limited service and route coverage. Not included in Table 1-2.

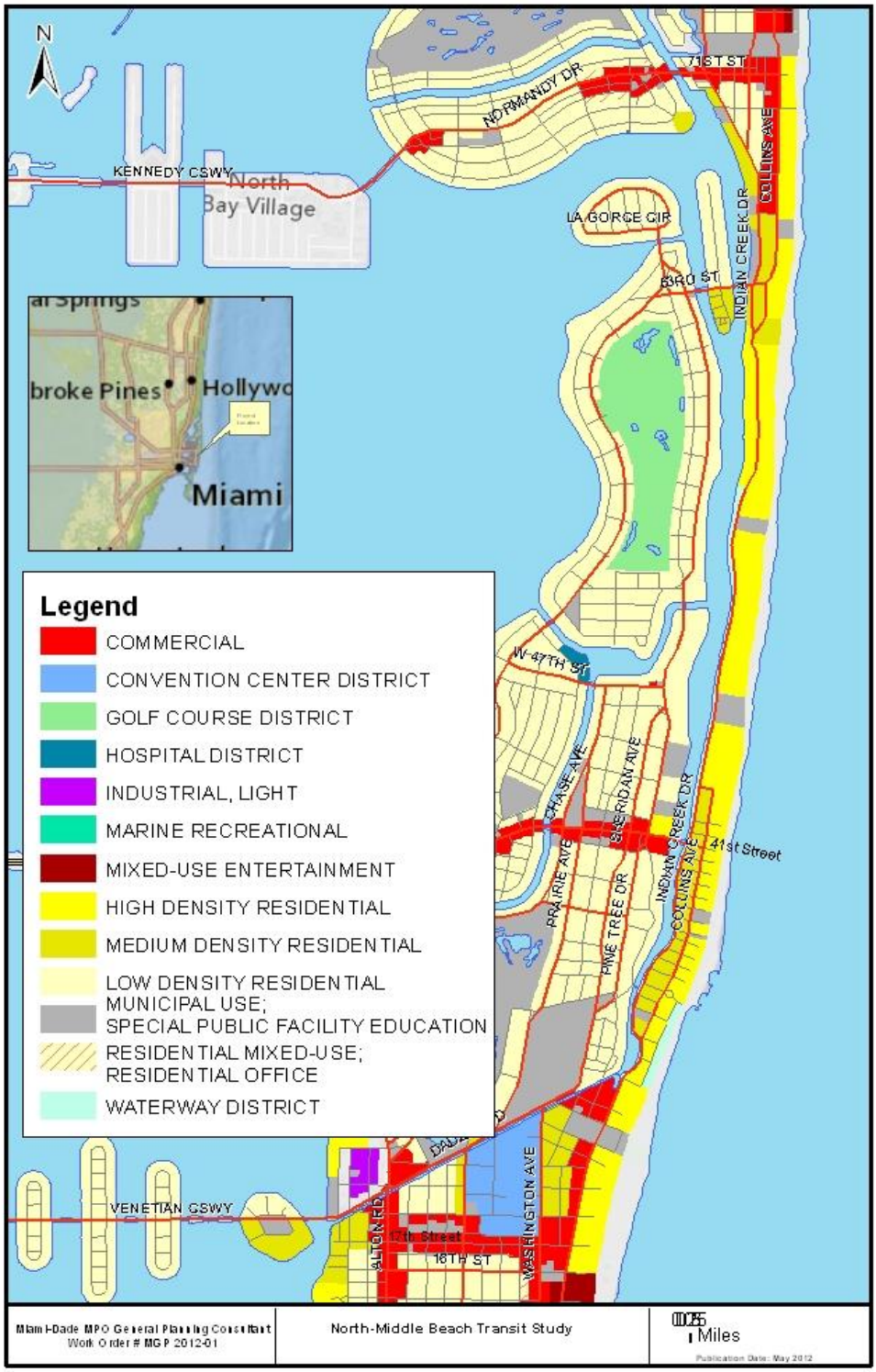
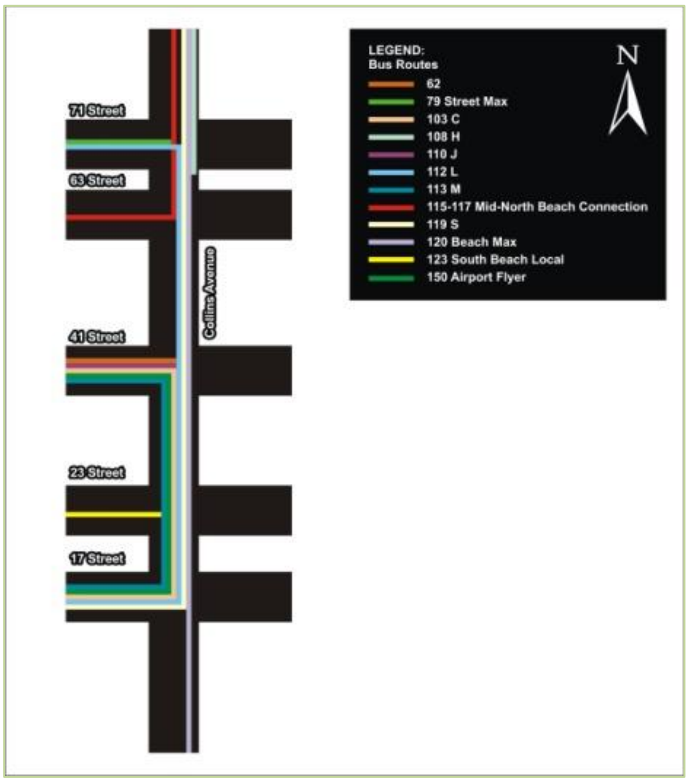


Figure 1-2- Land Use in the Study Corridor

Table 1-2 - Existing Weekday Service by Corridor Segment

Weekday Route	AM Headway (minutes)	Midday Headway (minutes)	PM Headway (minutes)	AM Buses/Hour	Midday Buses/Hour	PM Buses/Hour
71st Street	5	7	5	13	9	13
A1A (71st to 63rd)	4	4	4	15	15	14
A1A (63rd to 41st)	3	3	3	20	19	20
A1A (41st to 17th)	2	2	2	29	30	30

Figure 1-3 to the right summarizes the existing service, which offers a bus every two to seven minutes, between nine and thirty buses per hour. Admittedly, many of these buses cover only a portion of the study corridor and would not be of use to those attempting to travel from one end of the corridor to the other. In addition, the complexity of the route structure suggests that some study would be required to effectively navigate the system.



Service on Saturdays and Sundays is noticeably reduced but still offers a bus every three to six minutes over the entire corridor, with the exception of 71st Street.

Miami Beach is currently served with two circulator routes, that is, routes that follow a loop on a regular basis and at reasonably short intervals.

The South Beach Local generally travels on a route from Dade Boulevard and Washington Avenue to South Pointe Drive and then north on Alton Road to Dade Boulevard, returning to Washington via Dade Boulevard, Meridian Avenue, and 17th Street. The bus circulates around the Sunset Harbor area and passes through Belle Isle. It also circulates around Collins Park traveling to Collins Avenue along 21st and 23rd Streets. The route is organized in two parts, a clockwise and counter-clockwise direction, both operating on 13 to 20 minute headways. (See route map in Appendix A).

The Mid-North Beach Connection generally travels along Sheridan Avenue/Pine Tree Drive, Collins Avenue, Abbot/Harding Avenues, and Alton Road. The route is also organized with a clockwise and counter-clockwise run every 45 minutes. (See Route map in Appendix A).

Figure 1-3 - Schematic of Existing Transit Service

Table 1-3 - Existing Saturday Transit Service by Corridor Segment

Segment	AM Headway	Midday Headway	PM Headway	AM Buses/Hour	Midday Buses/Hour	PM Buses/Hour
71st Street	15	15	15	4	4	4
A1A (71st to 63rd)	5	5	5	12	12	12
A1A (63rd to 41st)	5	5	5	12	12	12
A1A (41st to 17th)	3	3	3	21	23	22

Table 1-4 - Existing Sunday Transit Service

Segment	AM Headway	Midday Headway	PM Headway	AM Buses/Hour	Midday Buses/Hour	PM Buses/Hour
71st Street	15	15	15	4	4	4
A1A (71st to 63rd)	6	6	6	10	10	10
A1A (63rd to 41st)	6	6	6	10	10	10
A1A (41st to 17th)	4	3	3	15	20	19

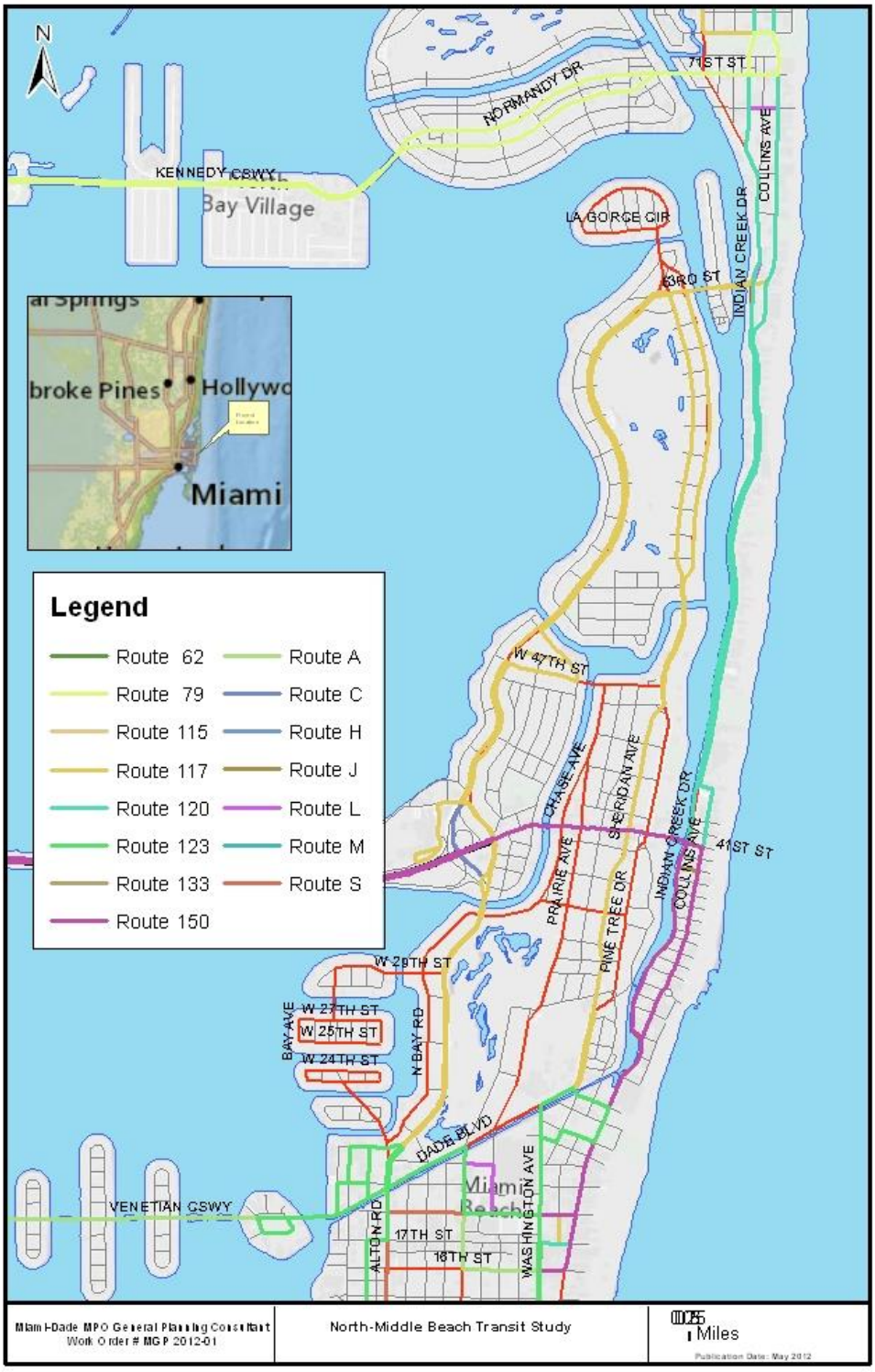


Figure 1-4 - Existing Bus Service

1.3 Description of Proposed Service and Market

Proposed service would operate along A1A (Collins Avenue and Indian Creek Drive), 71st Street/Normandy Drive, 40th/41st Streets, and 17th Street.

Figure 1-5 - Proposed Bus Service

The length of the corridor and three branches off of A1A suggest that a single route, covering all approximately 15 miles of the length of this proposed route might not be the best configuration for service. Instead, two routes covering the entire proposed corridor, as described in a subsequent section of this report is proposed.

2. Existing Conditions

2.1 Existing Street System

The study corridor is of a network of relatively few north-south roads intersected by local east-west streets spaced roughly 400 feet apart. On the northern and southern ends of the corridor and along 41st Street a simple grid system surrounds the primary route corridor. Over much of the length between 63rd Street and 26th Street, A1A is the sole north-south street in the corridor and intersects only with driveway entrances to the various apartment, condominium, and hotel buildings.

A1A is posted at 35 to 40 miles per hour while the remaining streets are typically 25 mph local streets. A1A varies from between two to three lanes in each direction and includes auxiliary turn lanes in many locations. The local streets are generally one lane in each direction with parking in most locations on one or both sides of the street.

A1A contains a unique service road for northbound traffic to make a U-turn. Turning traffic enters the service road, which is also accessed from all of the adjacent properties between 44th Street and 63rd Street. The turning vehicle is then able to make a U-turn on a protected left turn phase to continue southbound on A1A.

Several one-way pairs of streets separate traffic in opposite directions. A1A is bifurcated north of 60th Street and between 26th and 44th Streets. 71st Street is the eastbound leg to Normandy Drive between Rue Notre Dame and Bay Drive on the northern end of the study area.

All of the streets are generally lined with sidewalks and the right-of-way is fully occupied by the carriageway and sidewalk. Shared bike lanes are posted in some locations. In other locations, an on-street lane is painted or the sidewalks are used by cyclists.

Pull-out bus bays are located in several locations along the study corridor. Several are located along 41st Street and a major facility is located on the southwest corner of Indian Creek Drive and 41st Street. These bays permit traffic to exit the flow of traffic to pick-up and discharge passengers. Heavy traffic can inhibit the ability of drivers to bring the buses back into the flow of traffic.

Nearly 100 traffic signals control traffic operations along the route corridor. Some signals operate in a coordinated system. Many signals are traffic-actuated, controlling traffic entering A1A from local properties. Figure 2-1 shows the location of those signals.

The corridor is also lined with bus stops, generally spaced at 1,000-foot intervals. Most buses stop at most stops that they pass along their route. The stop locations in the study corridor can be found in Figure 2-2.

Figure 2-1 - Traffic Signals in the Study Corridor

2.2 Existing Land Use

The study area is comprised of two distinct land use clusters. For most of the length, A1A is dominated by high density residential land use. Between Lincoln Road on the south and 71st Street on the north, A1A is lined with tall condominium buildings interspersed with several large hotels.

The three east-west segments of the corridor, 17th Street, 41st Street, and 71st Street are primarily commercial/retail in nature with only limited residential use.

Figure 1-2 shows the distribution of land use as presented in the county land use plan. Lower density residential land west of Indian Creek is physically separated from the A1A corridor because of the creek. The creek is crossed only at 71st Street, 63rd Street, 41st Street, and by a pedestrian bridge at 26th Street before turning to the west as the Collins Canal along Dade Boulevard. Consequently, the market for any transit in the A1A corridor is constrained by this natural barrier.

Figure 2-2 - Existing Bus Stops in the Study Corridor

2.3 Principal Traffic Issues

Traffic operations are generally typical of any urbanized area. While traffic does not move quickly, adjustments to signal timing and management of local access have generally permitted reasonable operations throughout the study area.

Several areas do experience exceptional traffic delays that would affect transit operations. 71st Street traffic heading westbound across Biscayne Bay can experience delays due to ineffective signal progression. In addition, it would appear that clearing traffic after a bridge opening may take some time resulting in delays in the westbound direction.

Northbound traffic between approximately 60th Street and 69th experiences delay from several sources. The narrow roadway, tall buildings adjacent to the roadway, and curvature of the roadway tend to slow traffic regardless of traffic volumes. The absence of turning opportunities and driveway activity does not overcome the physiological influence of these physical factors in causing traffic to slow.

Furthermore, considerable on-street loading activity of both passengers and goods, primarily on the east side of the street can close the easternmost lane and cause traffic to merge. The west side of the street allows parking and parking maneuvers, particularly in conjunction with east side loading, can adversely affect traffic flow.

Southbound traffic operations are affected on weekend evenings and nights due to several factors. First, signals are activated by traffic exiting the major hotels, which can interrupt the progression of southbound A1A signals. The southbound to eastbound movement at 41st Street should be a free-flow condition. But because the right lane is a turn-only lane, traffic frequently jockeys between that and the second lane so as not to be channeled in the wrong direction. Pedestrian activity and significant east-west cross traffic can impede southbound traffic.

Signals on 41st Street are generally well progressed. It would appear however, that the signal at Pine Tree Drive is a three-phase signal while the other signals on 41st Street are two phase. The result is that the Pine Tree signal is frequently out of sync with the rest of the street. This can have a significant impact on eastbound traffic, which then must contend with the intersection of Indian Creek Drive and 41 Street, as mentioned above. Westbound 41st Street is delayed during the morning peak period by heavy volumes.

Southbound traffic on Collins Avenue is impeded in the

vicinity of 26th Street. Here as with the location further north, the curvature of the road and limited lateral clearance causes some slowing of traffic.

The section of Collins Avenue between 17th Street and approximately 22nd Street is frequently delayed due to heavy driveway activity, pedestrian volumes, and relatively high traffic volumes for a street with only one through lane coupled with a second lane that do not offer a protected turn phase.

Figure 2-3 below illustrates these locations graphically.

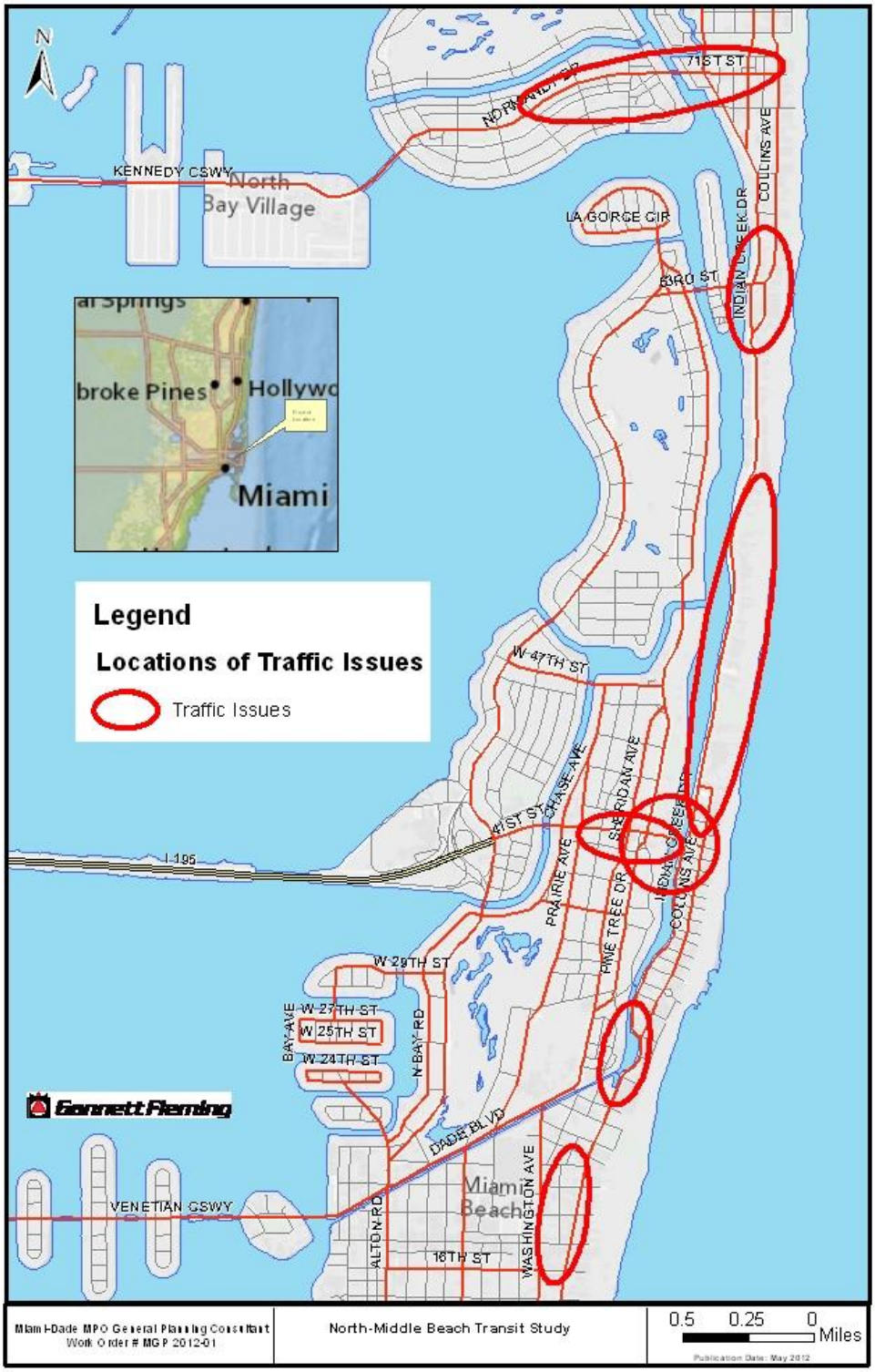
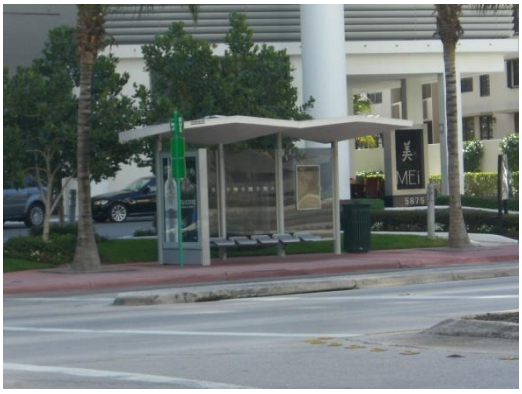


Figure 2-3 - Traffic Issues in the Project Corridor

2.4 Existing Transit Stops and Shelters

The proposed transit corridor covers a two-way distance of approximately 14.7 miles. Within this stretch of roadway are 76 bus stops, an average of one every ±1,000 feet. The stops are configured differently depending upon demand, number of routes serving the stop, and available right-of-way.



Approximately half of the stops are equipped with a bus shelter including pole and schedule sign, bench, and trash receptacle. Three styles are evidenced within the study corridor. The most common configuration is a "Miami Beach" style shelter comprised of a precast concrete roof, Plexiglas walls, and open in the front and on the upstream side. The shelter contains a bench comprised of five separate seats. These shelters display advertisements on at least one side.

In several instances, an older style flat-roof shelter is deployed. These shelters include the route sign and trash receptacle. The bench is a single piece construction.

In a very few instances, a pointed metal roof was found. The other features – route sign, trash receptacle, single-piece bench – were used.

Most every other bus stop is equipped with a bench along with the trash receptacle and route sign. In only one instance, where right-of-way is particularly limited, was a stop equipped only with a route sign.

Most bus stops make use of the curb lane for pick-up and discharge of passengers. Consequently, the lane is blocked during the loading and unloading. At several locations, most notably along 41st Street, bus pull-outs allow buses to exit the traffic stream. Bus operations may be delayed as bus drivers wait for a break in traffic to return to the traffic flow.

3. Survey of Transit Market

The proposed service would represent a new transit operation that would be configured to appeal to a new market. Generally, it is not anticipated that users of the proposed service are currently using the existing MDT service in any significant numbers. It was important therefore, to assess the demand from a population not currently using bus transit in Miami Beach.

A brief survey instrument was developed that would serve as a self-administered survey. The instrument is found in Appendix B of this document. The central questions in the survey relate to the types of trips that residents and visitors currently make within the City including destinations, trip purpose, time of day, mode of travel, frequency, and travel time. Respondents were offered an opportunity to identify up to three destinations.

The respondents were asked to identify themselves in terms of place of residence; in the case of Miami Beach residents whether they were full time or part time. They were also asked to identify their place of employment and current age.

Three opinion questions were included in the survey. Respondents were asked why, if that was indeed the case, they didn't currently make the trips by transit. A series of possibilities was offered along with an "Other" answer for which another reason could be included.

Respondents were asked how long they would be willing to wait for the bus and how far they would be willing to walk to a bus stop.

The reverse of the survey shows a map of the route corridor to help orient the respondent to the proposed service and focus the responses on destinations that would likely be served by transit service. The surveys were distributed to apartment buildings, condominiums, and hotels along the corridor. Buildings were selected first for geographical distribution and secondarily for size. In an effort to reach the maximum number of individuals the largest buildings were selected. Several notable exceptions exist, where larger buildings were not present in certain parts of the corridor.

The survey locations are shown in Figure 3-1 below. The locations are listed on Table 3-1 below. A total of nearly 4,800 units were solicited with surveys. Surveys were distributed through the property manager or hotel management office with a request that responses be returned to the front desk or emailed directly to the study team.

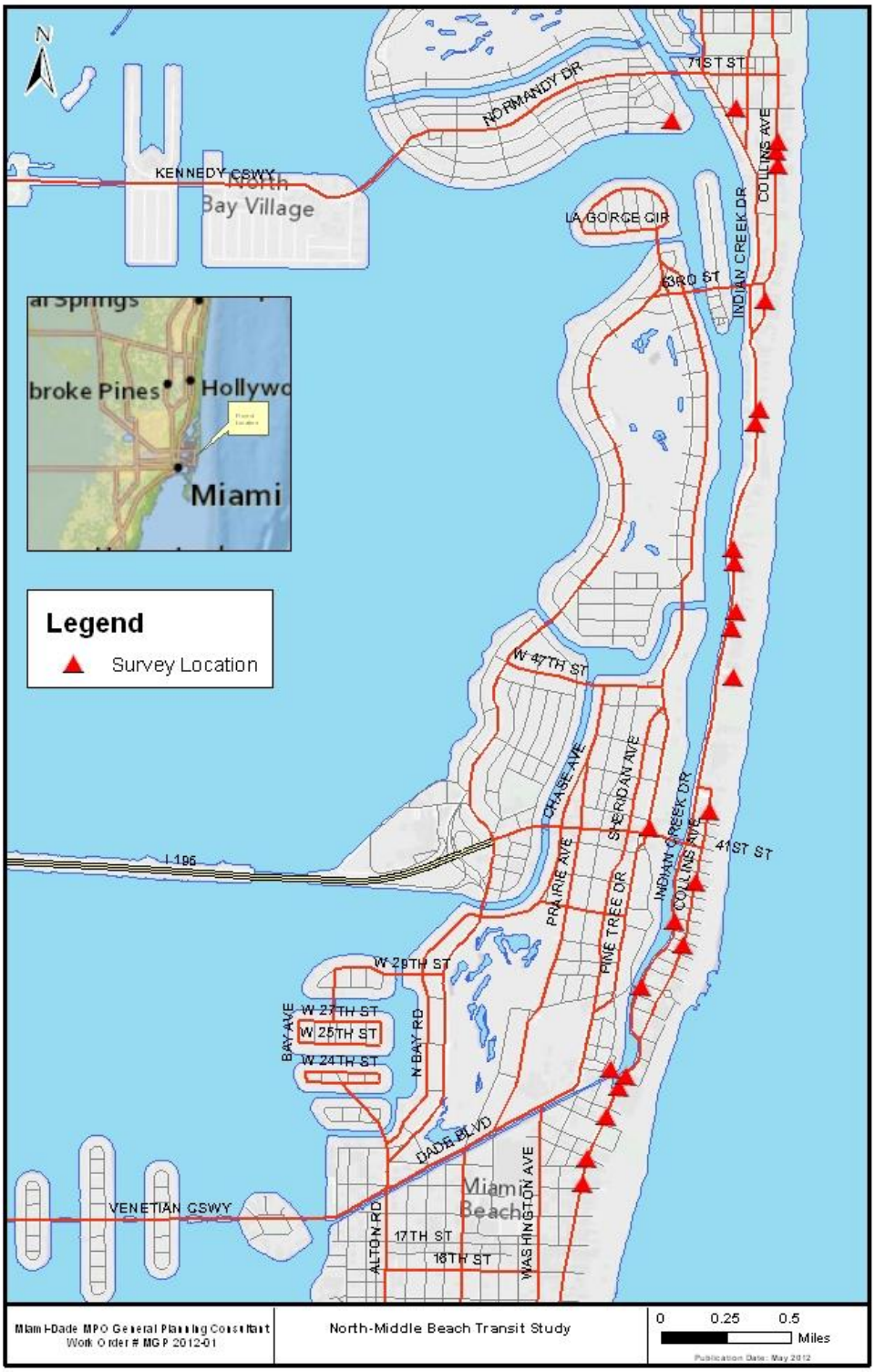


Figure 3-1 - Survey Locations

Table 3-1 - Survey Locations

Site Number	Building	Type	Address	Number of Living Units
01	King Cole	Apartment	900 Bay Drive	299
02	King David Towers	Condo	3411 Indian Creek Drive	49
03	Four Freedoms House	Apartment	3800 Collins Avenue	210
04	Byron Hall Apartments	Condo	401 69th Street	206
05	Blue & Green Diamonds	Condo	4775-4779 Collins Avenue	344
06	Executive	Condo	4925 Collins Avenue	128
07	Carriage Club	Condo	5005 Collins Avenue	310
08	Seacoast Suites	Apartment	5101 – 5161 Collins Avenue	239
09	The Alexander Hotel	Apartment	5225 Collins Avenue	230
10	Shelborne	Condo / Time Share	1801 Collins Avenue	255
11	Boulan South Beach	Condo	2000 Collins Avenue	52
12	The Royal Club	Condo	2401 Collins Avenue	103
13	Helen Mar	Condo	2421 Lake Pancoast Dr	86
14	Clearview Towers	Condo	2829 Indian Creek Drive	122
15	Portugal Towers	Condo	3200 Collins Avenue	96
16	Holiday Inn	Hotel	4333 Collins Avenue	252
17	Arlen Beach Condominium	Condo	5701 Collins Avenue	255
18	Perry Hotel	Hotel	2375 Collins Avenue	647
19	The W Hotel	Condo / Time Share	2201 Collins Avenue	424
20	Canyon Ranch Hotel and Spa	Condo/Hotel	6801 Collins Avenue	232
21	Aquasol	Condo	6770 Collins Avenue	228
22	Deauville Beach Resort	Hotel	6701 Collins Avenue	484
23	Maison Grande Condominium	Condo	6039 Collins Avenue	502
24	5600 Condominium	Condo	5600 Collins Avenue	289
25	Tower 41	Condo	4101 Pine Tree Drive	466
				4,767

3.1 Survey Response

A total of 255 surveys were received, which represents approximately four percent of the total number of dwelling units or hotel rooms in the survey. A precise response rate cannot be computed as the occupancy at the time of the survey is unknown and the seasonal nature of Miami Beach will typically result in a fair number of vacancies particularly in the April/May time frame when the survey was conducted. The results however, give some indication of the travel behavior of residents and visitors in the corridor and can be used to support and refine the proposed transit service.

Table 3-2 - Survey Response by Location

King Cole	299	0	0%
King David Towers	49	6	12%
Four Freedoms House	210	12	6%
Byron Hall Apartments	206	12	6%
Blue & Green Diamonds	344	5	1%
Executive	128	6	5%
Carriage Club	310	12	4%
Seacoast Suites	239	19	8%
The Alexander Hotel	230	0	0%
Shelborne	255	0	0%
Boulan South Beach	52	0	0%
The Royal Club	103	8	8%
Helen Mar	86	1	1%
Clearview Towers	122	10	8%
Portugal Towers	96	16	17%
Holiday Inn	252	0	0%
Arlen Beach Condominium	255	0	0%
Perry Hotel	647	20	3%
The W Hotel	424	32	8%
Canyon Ranch Hotel and Spa	232	0	0%
Aquasol	228	27	12%
Deauville Beach Resort	484	9	2%
Maison Grande Condominium	502	20	4%
5600 Condominium	289	1	0%
Tower 41	466	34	7%
Unidentified		5	
TOTAL	6508	255	4%

Nearly four of five respondents, as shown on Table 3-2, are full or part-time residents of Miami-Beach. An additional 14.5 percent were visitors, mostly from outside of South Florida. When reviewing the home zip code of the respondents similar results are revealed: 84 percent of those reporting a zip code reported Miami Beach as the zip code of residence. Approximately one-third do not work while another third work in Miami Beach (see Table 3-5 below).

Table 3-3 - Residence of Respondents

Residence	Count of Number	% of Total
No response	6	2.4%
Broward or Palm Beach	4	1.6%
Miami Beach Full Time	177	69.4%
Miami Beach Part Time	23	9.0%
Miami-Dade County	12	4.7%
Visitor/Tourist	33	12.9%
Grand Total	255	100.0%

Table 3-4 - Zip Code of Residence of Respondents

Zip Code of Residence	Count of	% of Total	% of Total
No response	90	35.3%	n/a
New York City	6	2.4%	4%
South Florida	15	5.9%	9%
Miami Beach	139	54.5%	84%
Other (California, Arizona, Tennessee)	5	2.0%	3%

Table 3-5 - Employment of Respondents

Employment	Count of Number	% of Total
No response	34	13.3%
Do not work	89	34.9%
Miami Beach	76	29.8%
Miami Dade	13	5.1%
Outside Miami-Dade	43	16.9%
Grand Total	255	100.0%

The ages of the respondents was fairly evenly distributed between age 17 and 99. Table 3-6 below indicates the distribution of the age of the respondents.

Table 3-6 - Age of Survey Respondents

Age Range	Number of Respondents	Percentage of Respondents
0 to 30	27	11%
31 to 40	31	12%
41 to 50	30	12%
51 to 60	15	6%
61 to 70	32	13%
71 to 80	29	11%
81 to 90	21	8%
Over 91	3	1%
No response	67	26%
Total	255	100%

Just under half of the respondents reported using transit for some of their trips in Miami Beach (Table 3-7). These results are supported by the more detailed reports of how respondents made trips to various destinations within the Beach. This would tend to indicate either a higher proportion of transit users than was previously assumed or that those using transit had a greater tendency to respond to the survey.

Table 3-7 - Use of Transit by Respondents

Use Transit	Count of Number	% of Total
No	141	55.3%
Yes	114	44.7%
Grand Total	255	100.0%

As shown in Figure 3-2 below, most respondents would be willing to wait 15 minutes or a value of time less than 15 minutes (e.g., 5, 10, 15 minutes). A full 90 percent of the respondents answered that they would be willing to wait any value of time less than 20 minutes (e.g., 5, 10 15 or 20 minutes). Respondents were less willing to walk longer distances as shown in Figure 3-3. Most respondents expressed a willingness to walk approximately 5 minutes, which would translate to about a quarter mile.

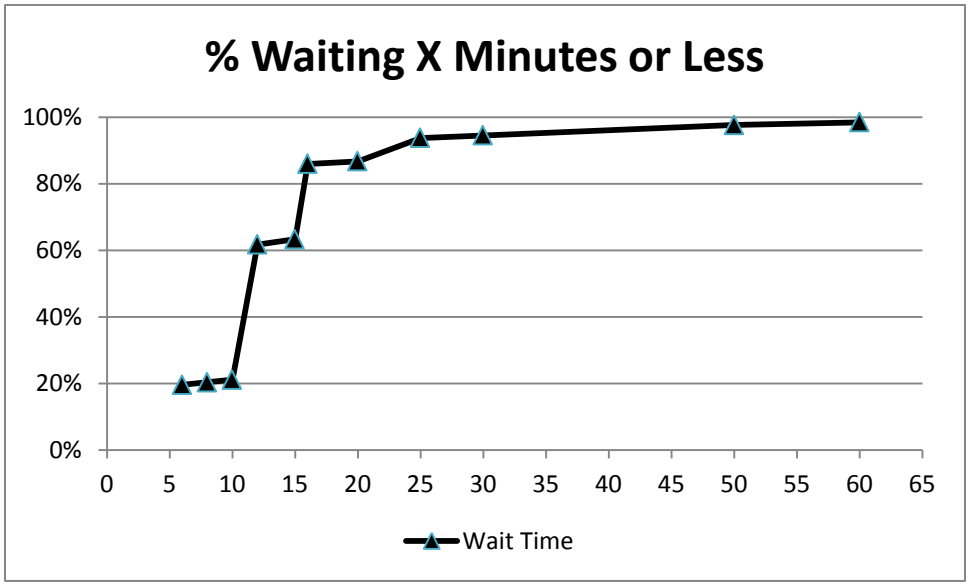


Figure 3-2 – % respondent that answered that they would not wait more than the specified time

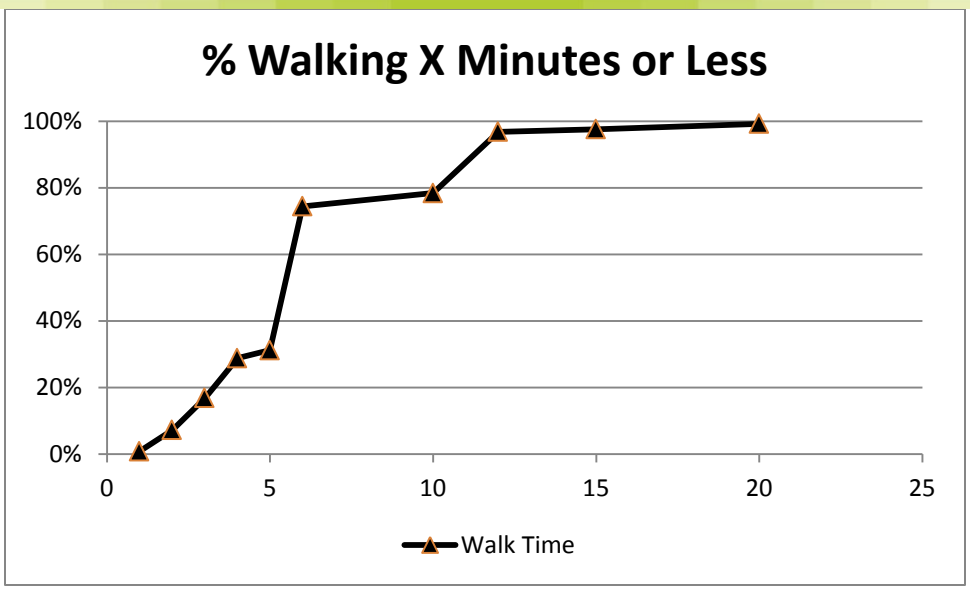


Figure 3-3 - % respondent that answered that they would not walk more than the specified time

Respondents reported a variety of local trips as shown in Table 3-8 below. Entertainment represented the most frequent type of destination (33%), followed by shopping (25%) and then work (18%). The remaining 24 percent were for dental/medical appointments (9%), dining (7%), and a scattering of other diverse destinations.

Table 3-8 - Type of Trip Destination

Trip Destination	Number of Responses	Percent of Those Reporting
No response	13	n/a
Bank/Financial	3	1%
Business	3	1%
Class/Education	5	2%
Dental/Medical	19	9%
Dining	16	7%
Entertainment	70	33%
Exercise	2	1%
Home	1	0%
Religious	3	1%
Work	38	18%
Shopping	54	25%

Responses as to specific destinations were so diverse as to be difficult to characterize. However, nearly a third of the responses identified four specific locations: Lincoln Road, Publix and other grocery stores, Mount Sinai Hospital, and movie theaters, for which the Regal Cinema on Lincoln Road is the largest in the city and therefore most likely destination.

3.2 Reasons for Not Using Transit

Respondents offered reasons for not using transit as shown in Table 3-9 below. Safety and cost were not common concerns but the remaining seven possible responses were offered in similar proportions. In elaborating on "other" reasons for not using transit, the most common response was that the respondent owned or had access to an automobile. Several of the other responses suggest that the existing service does not meet the needs of the individual.

Table 3-9 - Reasons for Not Using Transit

Why Not Use Transit	Number of Responses
Too Slow	35
Does Not Go There	27
Not Familiar	24
Inconvenient	22
Unreliable	20
Too Crowded	18
Not Near Me	11
Not Safe	9
Too Expensive	5
Other	24

Table 3-10 - Explanation of Other Reasons for Not Using Transit

Other Reasons for Not Using Transit	Number of Responses
Have access to automobile	15
Physical disability	2
Dirty	1
Does not stop often	1
Mobility	1
Never have used Public Transportation	1
Rental	1
Cost	1
Travel with Dog	1

4. Proposed Route Structure

An assessment of the proposed route corridor suggests that 71st Street, 41st Street, and 17th Street would not efficiently be served by a single route. Instead, a two route structure with substantial overlap on A1A between 41st Street and 71st Street seems more appropriate given the nature of the corridor.

In general, the north-south portion of the corridor, along A1A, is primarily residential in nature while the east-west legs of 71st, 41st, and 17th Streets are primarily commercial. It would therefore appear that most transit trips in the corridor would take place between the home end of the trip and a shopping or recreational destination. While some trips could take place between one home and another or between one shopping location and another, the more prevalent pattern would be expected to be the former. Under this assumption, travel would be from along A1A to one of the three east-west streets rather than from one east-west location to another.

Covering the corridor with a single route would require passengers from 71st Street for example, to travel out and back on 41st Street before continuing to South Beach. Similarly, northbound passengers would have to travel the length of 41st when traveling north to points along Collins or 71st Street.

A two route system would enable passengers along 71st Street a one-seat ride to either 41st or 17th Street. Those not wanting to wait for the appropriate direct route could travel to 41st Street at A1A and transfer to MDT buses along 41st or A1A; MDT service frequency is much greater south of 41st Street and so a transfer would not entail a long wait.

The two route structure therefore, would appear to best serve most trips with a direct, one-seat ride and offer options for transfers to MDT service when not wanting to wait for the specific bus. The two route structure would also result in 10-minute headways along A1A.

4.1 Common Route Segment (Red/Green Route)

This segment of the service would operate eastbound on 71st Street and westbound on Rue Versailles between Rue Notre Dame and Bay Drive. East of Bay Drive, the route would operate in both directions along 71st Street. Southbound service would turn onto Indian Creek Drive rejoining Collins Avenue in the vicinity of 63rd Street. Northbound service would operate on Collins Avenue.

Service would continue on Collins Avenue and approximately 44th Street. Service to 41st Street would turn west on 41st Street while service to South Beach would continue on Indian Creek Drive, returning northbound on Collins Avenue.

4.2 Green Route

Service on this segment would operate along 17th Street, Collins Avenue/Indian Creek Drive between 17th Street and 44th Street. North of 44th Street, it would operate on the common (Red/Green Route segment) north to 71st Street.

4.3 Red Route

Service on this segment would operate westbound on 41st Street to Chase Avenue returning eastbound on 40th Street. Eastbound service would reconnect with 41st Street by turning left on Pine Tree Drive. The service would continue north of 41st Street on the common, Red/Green route segment.

4.4 Stop Locations

The location of bus stops requires a balance between proximity to potential riders and minimizing their walks to the stops with a desire to minimize the number of stops and therefore amount of delay for stops. Generally, half-mile spacing was considered the most appropriate limiting the typical walk to no more than a quarter mile, consistent with the preference expressed in the survey.

Figure 4-2 below shows the initial locations for potential transit stops to support the proposed service. A total of 25 are projected for the current study. These stops are located at existing bus stop locations and are intended to serve both regular MDT service and the proposed service.

Stops would include a shelter using the Miami Beach style format. A distinctive pylon, using the Miami Beach brand signage would be employed to identify the stops as Miami Beach service. These stops would include route information for the proposed Miami Beach service and should also include information for MDT service. Real-time transit information systems should be included at some time in the future to advise passengers of the arrival of the next bus.

4.5 Vehicle Type

It is anticipated that with frequent service, passenger loads would generally not be heavy and could be supported with small or medium-sized buses. The conventional 40-foot buses, which carry 38 seated passengers, may be not be necessary and could be more obtrusive and less maneuverable than a smaller vehicle. The smaller buses might also be more distinctive, reflecting the South Beach Local style and less expensive than a full-sized vehicle.

Regardless of the vehicle type, the exterior and interior should be distinctive and consistent with a “brand” that invites local ridership to circulate on the Beach.

Figure 4-1 - Proposed Route Structure

Figure 4-2 - Proposed Stop Locations

5. Proposed Service Plan

An initial service plan that responds to the apparent needs of the residents and visitors within the corridor would include service twelve hours a day, noon to midnight, seven days a week. Service for the Green and Red routes would each be on a 20-minute headway with the common, Red/Green segment operating on a 10-minute headway.

Under this arrangement, passengers along A1A from 71st Street to 41st Street would be able to walk to a stop and wait an average of only five minutes for the next bus. Those traveling to 41st Street could wait for the Red bus or simply walk from Indian Creek Drive west on 41st Street to their destinations. Those traveling south of 41st Street could wait for the Green bus, walk to nearby destinations, or transfer to existing MDT service, which operates more frequently south of 41st Street.

6. System Costs

Capital and operating & maintenance costs for several similar, local, small bus systems were assembled to use as a basis for estimating the cost of the proposed service. Information for the City of Miami Streetcar, Doral Trolley and Hialeah Transit were assembled. The following sections summarize that information.

6.1 Doral Trolley

The City of Doral operates three routes that operate within the city limits. The four transit vehicles are leased at a total annual cost of approximately $220,000 per year. The lease provides for the eventual ownership of the vehicles. All vehicles are relatively new and so major repair costs have not been incurred to date.

Operations and maintenance costs on all routes amounts to approximately $460,000 per year, which includes approximately $16,000 for printing and the preparation of a marketing and communications plan. Doral also spent approximately $31,000 for automatic vehicle location/geographic positioning systems, video cameras, and trolley tracking software. The total cost for the service is therefore approximately $750,000 per year.

Service operates 252 days per year. The length, travel time, and annual vehicles miles of travel are shown below.

Table 6-1 - Doral Trolley Route Characteristics

Route	Round Trip Length (miles)	Round Trip Time (minutes)	Trip Hours per weekday	Trip Hours per weekend	Vehicle miles per weekday	Vehicle miles per weekend day	Vehicle Miles Per Year	Vehicle Hours Per year
One	21.5	79	48	12 (Saturday only)	258	258	273,480	13,008
Two	15.0	59	13	none	195	none	49,140	3,354
Three	14.5	54	15	none	217	none	54,180	3,870
Total							376,770	20,232

6.2 Hialeah Transit

The City of Hialeah runs nine vehicles: eight 32-foot buses purchased at a cost of $305,000 each and five Bluebird buses of varying ages used as the ninth vehicle and as spares. Costs for operations, including driver and dispatcher salaries and benefits, and insurance amounts to $21.24 per hour. Maintenance on the vehicles, including repairs and routine maintenance, tires, and oil changes is $150,000 per year. Diesel fuel was budgeted at $262,000 per year.

In addition, Hialeah leases a trailer for use by the drivers and dispatcher at a cost of $3,500 per year. Miscellaneous supplies, including a counting machine, cost $5,000 per year.

Shelters were supplied by Clear Channel Outdoor Media at no cost to the city. The vendor pays through a revenue-sharing agreement on advertising in the shelters. Similarly, Scott Martin Outdoor supplies benches at no cost to the city.

Weekday service operates from 6 a.m. to 7:30/8 p.m. Saturday, service runs from 9 a.m. to 3:30/4 p.m. Annually, vehicles operate 33,500 hours per year as summarized on the table below.

Table 6-2 - Hialeah Transit Service Characteristics

Route	Round **Trip Length** (miles)	Round **Trip Time** (minutes)	**Trip Hours per day**	**Vehicle Miles Per Year**	**Vehicle Hours Per year**
Flamingo	21.5	30	13.5	73,143	6,291
Dolphin	26.5	30	13.5	90,153	6,993
Total				163,296	13,284

6.3 City of Miami

The City of Miami operates a rubber-tired streetcar system under a contract arrangement. The operating cost is $28 per hour for service 251 days per year and 16 hours per day. Service runs between 6:30 a.m. and 7 p.m. every 15 minutes during the day and every 20 minutes in the evening. Fuel is currently budgeted at $3.76 per gallon. Advertising revenue of $300 per vehicle per month is anticipated.

6.4 Cost Estimate of Miami Beach Service

The cost estimate for the proposed transit service was calculated using current transit operating speeds. While traffic engineering and other improvements, discussed later in this report, could be implemented, the existing conditions were used as a basis for planning proposed bus operations.

Transit service on each of the route segments, as shown in the table below, were used to estimate the average operating speed for transit buses in each direction. The travel times were based on the scheduled time for existing MDT service.

Table 6-3 - Average Operating Speeds on Proposed Route

Road	Segment	Length (miles)	Peer Route Segment	Peer Segment	Travel Time (minutes)		Speed (mph)	
					EB	WB	EB	WB
41st Street	A1A to Chase	0.54	Route J	41st/Alton – 41st/Indian Creek	8	9	5.6	5.0
A1A	41st to 47th	0.59	Route 120	41st- 69th	10	10	17.2	17.2
A1A	47th to 63rd	1.57	Route 120	41st- 69th	10	10	17.2	17.2
A1A	63rd to 71st	0.8	Route 120	41st- 69th	10	10	17.2	17.2
71st Street	Collins to Normandy	0.84	Route L	Indian Creek-Abbott; Collins-Harding	12	14	9.3	16.5
A1A	41st to Lincoln	1.62	Route L	41st & Collins-Lincoln/James	9	10	10.1	9.1
17th Street	Collins to West Ave	0.8	Route A	Alton & Dade/Lincoln & Washington	6	7	6.8	5.8
Total Length		6.76					8.7	

Applying these average speeds to the proposed system, it is anticipated that the following service will be delivered. It is interesting to note that a vehicle circulating along the proposed route during times of no traffic congestion would operate at about 16.5 miles per hour. The average of 8.7 indicates appreciable delay resulting from the pick-up and discharge of passengers.

Table 6-4 - Vehicle Service Requirements and Annual Vehicle-Hours of Service

Route	Route Length (miles)	Hours of Service	Headway (minutes)	Runs/ Day	Run Time (minutes)	Vehicle-hours/ Day	Days/ year	Vehicle-hours/ Year
Red Route	10	12	20	36	69	42.0	364	15,288
Green Route	12	12	20	36	85	51.0	364	18,564
TOTAL	22			72		93.0		33,852

Table 6-5 and Table 6-6 below apply the unit costs, as indicated in the notes column, to the proposed service for Miami Beach. The initial capital costs, assuming the purchase of all equipment, would be approximately $3.1 million per year. Annual operating and maintenance costs would be approximately $4.8 million per year.

Table 6-5 - Cost Estimate of Miami Beach Service (Capital Costs)

Capital Costs					
Item	Units	Unit Cost	Number	Cost	Notes
32-foot transit bus	Per vehicle	$ 305,000	13	$ 3,965,000	Total costs similar for lease or purchase
Office trailer	Per year	$ 3,500	1	$ 3,500	For drivers and dispatcher
Shelters	Per shelter	$ -	n/a	$ -	Under contract from Clear Channel Outdoor Media
Benches	Per bench	$ -	n/a	$ -	Scott Martin Outdoor
Transit technology	Lump sum	$ 30,725	1	$ 30,700	AVL/GPS, IVR, APC, Video Cameras and Trolley Tracker
TOTAL				$ 3,999,200	

Table 6-6 - Cost Estimate of Miami Beach Service (Annual Operating and Maintenance Costs)

Operating Costs					
Item	Units	Unit Cost	Number	Cost	Notes
Operations & Maintenance	Per revenue-hour	$ 45.00	33,852	$ 1,523,000	Based on Doral & Hialeah
Fuel	Per vehicle-mile	$ 2.00	582,442	$ 1,165,000	Diesel fuel
Printing Services	Per year	$ 500.00	1	$ 500	
				$ 2,688,500	

7. Recommendations

The City of Miami Beach established a tentative budget of $1.3 million per year for operations and maintenance costs for a North-Middle Beach Circulator. The system considered in the previous chapter therefore, was refined to meet the budgetary constraints of this figure. The essential elements of the proposed service were established to be as follows:

- Connect North Beach (Normandy Drive/71st Street) with 41st Street and South Beach (generally, the vicinity of 17th Street to Lincoln Road);
- Extend service to north City line to serve senior community at Harding and 87th Street;
- Rely upon existing MDT service to extend the range of the service beyond A1A (i.e., South Beach Local for service west of Collins Avenue; Hialeah-Biscayne Boulevard Route 62, Mt. Sinai-CBD Route C along 41st Street);
- Maintain a headway of 15 minutes throughout the 12-hour service period, seven days a week.

The revised, recommended service therefore would commence at Rue Notre Dame and Normandy Drive, operate on 71st Street to Indian Creek Drive, and run south to 41st Street. At 41st Street, the service would travel west to Sheridan Street, circling the block to return on 40th Street and Pine Tree Drive. It would then continue south on A1A to Lincoln Road at Collins Avenue, travel west to Washington Avenue and then return to Collins Avenue on 17th Street. The route would then continue north on Collins Avenue to 88th Street, turning west and then south on Harding Avenue. It would then continue to Normandy Drive and the starting point of the route. Figure 7-1 shows the proposed route and the tentative stop locations. A total of 32 stops are identified, all existing with the exception of a proposed stop on Washington Avenue opposite Lincoln Road, which would be added for this service. The total route therefore, would be 14.3 miles with just over half-mile stop spacing.

7.1 Cost Estimate

The revised service plan would reduce both capital and operational costs vis-à-vis the initial service plan. The single route running on 15-minute headways would require only six buses to maintain service. The number of vehicle-hours of service would also be reduced. Table 7-1 below shows the capital costs associated with the proposed, revised service plan. No cost is assumed for bus shelters or other passenger amenities, assuming that these would be provided in exchange for advertising revenues. Shelters otherwise would cost $28,000 to 30,000 each.

Table 7-1 - Capital Costs for Revised Service Plan

Capital Costs					
Item	Units	Unit Cost	Number	Cost	Notes
32-foot transit bus	Per vehicle	$ 305,000	7	$ 2,135,000	
Office trailer	Per year	$ 3,500	1	$ 3,500	For drivers and dispatcher
Shelters	Per shelter	$ -	n/a	$ -	Under contract from Clear Channel Outdoor Media
Benches	Per bench	$ -	n/a	$ -	Scott Martin Outdoor
Transit technology	Lump sum	$ 30,725	1	$ 30,725	AVL/GPS, IVR, APC, Video Cameras and Trolley Tracker
TOTAL				$ 2,169,225	

Table 7-2 - Operating & Maintenance Costs for Revised Service Plan

Operating Costs					
Item	Units	Unit Cost	Number	Cost	Notes
Operations & Maintenance	Per revenue-hour	$45.00	28,756	$ 1,294,020	Based on Doral & Hialeah
Fuel	Per vehicle-mile	$0.35	250,243	$ 87,585	Diesel fuel
Printing Services	Per year	$500.00	1	$ 500	
TOTAL				$ 1,382,105	

7.2 Alternative Financial Plans

The City of Miami Beach could implement the proposed service under three alternative methods. First, the City could enter into an agreement with Miami-Dade Transit similar to the one for the South Beach Local. Under that agreement, the City pays 40 percent of the costs, which are estimated at $131.54 per revenue hour. No capital outlay is required and all costs are covered by the hourly cost.

The second alternative would be for the City to procure equipment, hire staff, and operate the service as a City agency. Capital costs would be incurred in the first year. Operating and maintenance costs would accrue based on the labor rates and other costs previously identified.

The third alternative would be for the City to engage the services of a turnkey contractor who would, for a fixed price, deliver the service as proposed. Capital costs would be amortized over the life of the agreement so that the City would make uniform payments covering capital and operating & maintenance costs. The interest costs for amortizing the vehicles would be distributed across the life of the contract. For purposes of this study, a five-year term was assumed.

7.2.1 Miami-Dade Transit as System Operator

This alternative relies upon the County's operator to extend service in accordance with this plan. All responsibilities would be assumed by the MDT including the hiring of staff, delivery and maintenance of vehicles, and ongoing operations in accordance with the proposed service plan. The City would have no additional administrative burden, and need no new personnel or organizational structure. The costs would be known and fixed over the life of the contract assuming the same 60/40 distribution of costs could be achieved and agreement could be reached on a five-year term. Service could begin almost immediately with minimal effort on the part of City personnel.

While this arrangement is the least expensive of the three, over a longer period of time, the higher operating & maintenance costs of the MDT arrangement would begin to exceed the cost of independently procuring vehicles and operating at a lower hourly cost. Assuming constant costs this would occur at year 18.

Options for vehicle type would be limited as MDT would rely on their standard fleet of vehicles. The smaller buses used on the South Beach Local could be deployed instead of standard 40-foot buses unless passenger loads dictated the larger vehicles. This flexibility is a benefit of using MDT as an operator that would not be available under the other alternatives.

Miami Beach would have limited control of the operation and would not be able to customize the service to the clientele and intended purpose of the route.

7.2.2 Miami Beach as System Operator

Under this alternative, the City of Miami Beach would procure equipment, hire drivers and other personnel, and store and maintain vehicles in existing government facilities. All responsibilities for the service would be borne by City personnel. The initial outlay for bus purchase and other capital expenditures would occur in the first year. In subsequent years, the City would incur only operating & maintenance costs.

Miami Beach-run service could be customized to meet the specific needs of the market. Service changes could be readily affected. The quality of service would be more directly controlled by the City and vehicles could be selected to promote a specific brand.

The principal disadvantage of this arrangement is that the City would need to embark upon an operation not currently contained within City government. An individual would need to be designated or hired to manage the service. Drivers and other staff would need to be hired, vehicles procured, and operations

initiated and maintained. It is assumed that labor costs could be contained to the same levels that could be achieved through a private operator but this issue would need to be investigated further.

7.2.3 Turnkey Operator as System Operator

Under this alternative, the City would engage a private operator to procure vehicles and drivers and deliver the required service for a fixed price. Training of personnel, maintenance of vehicles, and all other responsibilities would fall solely to the operator.

The operator could be engaged in a performance-based contract, requiring specific service including service reliability. The City would only need to monitor performance to ensure compliance with the terms of the contract.

This alternative represents the highest price alternative as the amortized capital costs would be added to the total cost of the service and distributed over the life of the contract.

7.3 Issues Requiring Further Study

This study indicates the potential that a North-Middle Beach circulator-type bus service could offer in the A1A corridor. Several additional matters should be studied prior to advancing this work toward implementation.

First, funding is always an important consideration. Funding sources for transit continue to be limited but the following should be examined:

- Farebox Revenue – While typical transit systems generate an average of 28 percent of their costs through farebox revenues, at any level, the fares can help cover the cost of implementing and continuing local transit service.
- People's Transportation Plan (PTP) – The half penny sales tax was intended to support local transportation and particularly transit. It is being applied in several municipalities running their own system. This funding typically goes directly to the municipality for use within the jurisdiction.
- Grants – The Federal Transit Administration and social service agencies at the federal and state level may have grant money, at least to start the system. Grant money may be most applicable to capital costs but may also have implications for ongoing operations and maintenance costs.
- Advertising Revenue – Advertising on the stations and in the buses is often a supplemental source of revenue for transit systems. Many bus shelters and benches were purchased and installed in exchange for the advertising revenue that they would generate. Either a private vendor such as Clear Channel Communications who supplied MDT shelters, or the city itself, could embark on a program to advertise and use the revenue to supplement other funding sources.

This study identified several locations where traffic operations represent a serious hindrance to the efficient movement of transit buses. Prior studies in the vicinity of A1A between 40th and 48th Streets

have identified several low-cost actions that might improve operations and therefore speed the passage of transit buses.

Attention to signal timing and traffic signal priority, particularly in sections of the route with one-way operations, offer significant potential for moving buses more expeditiously. Signal priority, if applied only to Miami Beach buses rather than all buses (i.e., MDT buses), must be more feasible as the number of vehicles would be less and therefore the impact on general traffic reduced.

Ridership forecasting could be conducted to get an estimate of the potential ridership that could be generated with this service. The market attitudinal survey conducted as part of this study identified potential but was insufficient to offer a range of ridership that could be expected. Sketch planning techniques and a combination of regional travel demand forecasting and spreadsheet-type estimation would further crystallize the potential for the proposed service.

Vehicle selection will become an important consideration and could be explored further. Miami Beach has a reputation as a "green" community and environmentally-friendly fuels and energy-efficient vehicles are available. In addition, the desire for a unique Miami Beach brand to the service would warrant selection of a different vehicle than that typically found in urban settings. The City should not be constrained by the existing fleet employed by MDT or even the vehicle used by the South Beach Local.

Alternative Pricing/Financing Scenarios

Scenario	Capital Costs	Annual Operating & Maintenance Costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total (excluding escalation and time value of money)
MDT Operates Service (60/40 split of costs)[1]	$0	$1,382,105	$552,842	$552,842	$552,842	$552,842	$552,842	$2,764,210
Miami Beach Operates Service[2]	$2,169,225	$1,382,105	$3,551,330	$1,382,105	$1,382,105	$1,382,105	$1,382,105	$9,079,750
Turnkey operation by private vendor[3]	$2,169,225	$1,382,105	$1,911,159	$1,911,159	$1,911,159	$1,911,159	$1,911,159	$9,555,794

1 - MDT charges standard price of $131.54 per vehicle-hour, no additional charges for vehicles, maintenance, or staff; Miami Beach pays 40% of cost

2 - Miami Beach matches private vendor labor costs, maintenance and vehicle storage in existing facilities

3 - Private vendor incorporates all costs into annual agreement

Figure 7-1 - Proposed Deco Bus Route and Stops

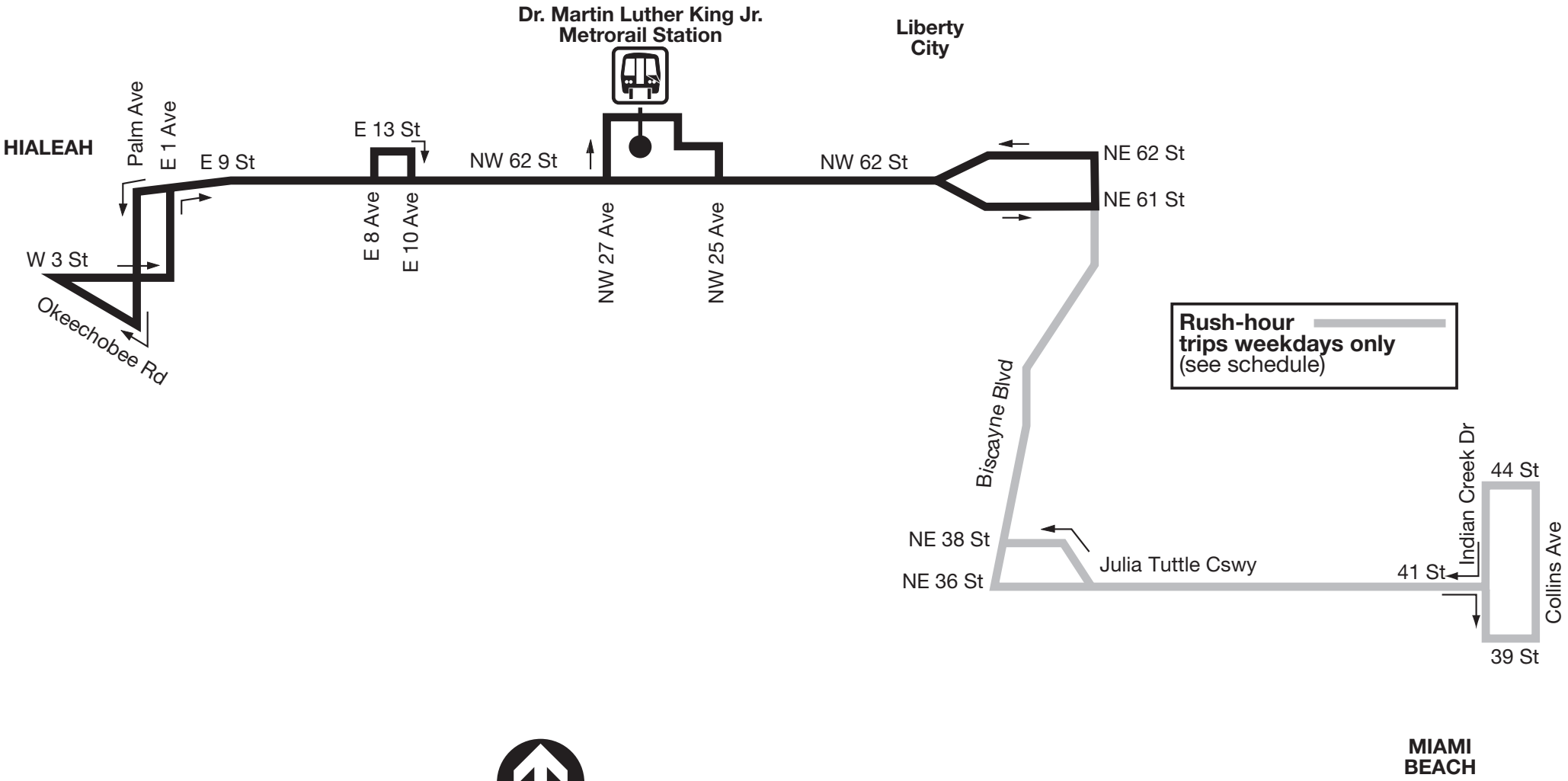
Appendix A – Route Maps

Appendix B – Survey Instrument

Appendix C – Peer System Unit Costs

Appendix A – Route Maps

Route 62

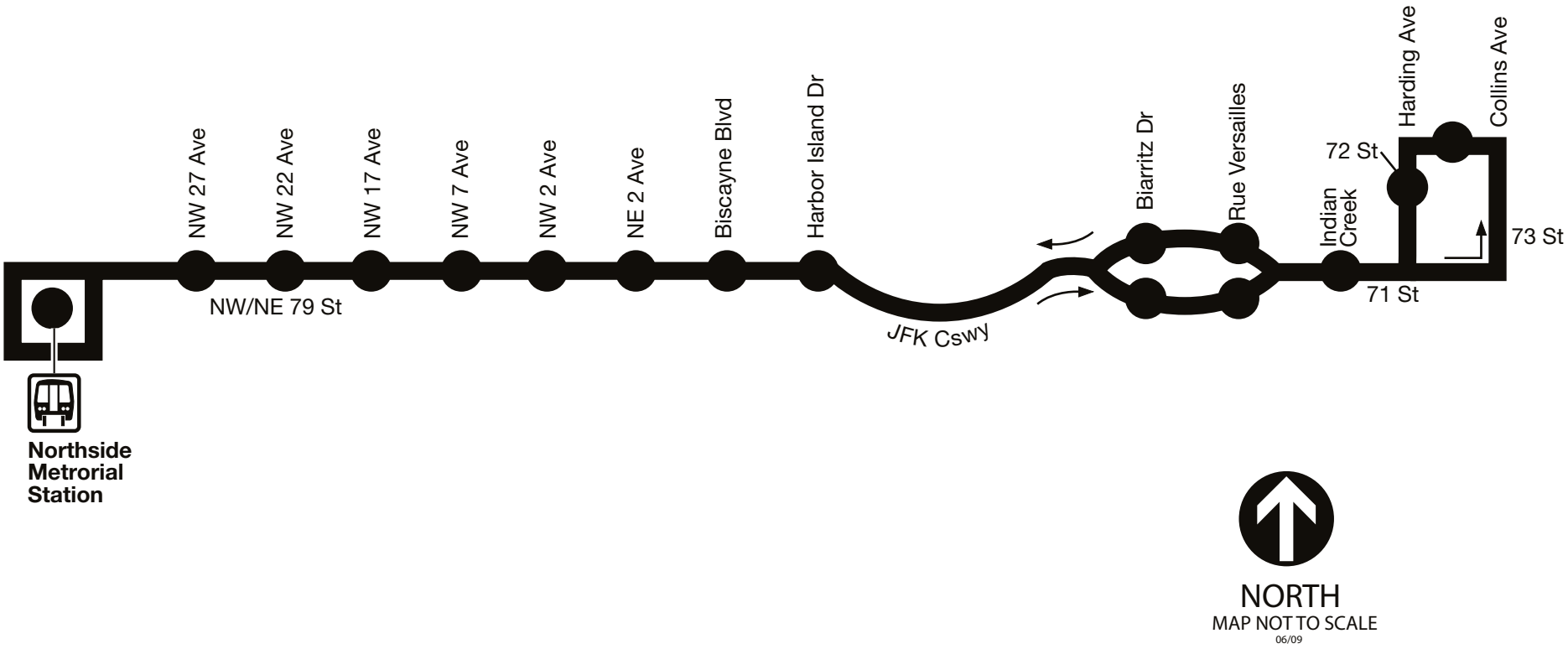


NORTH

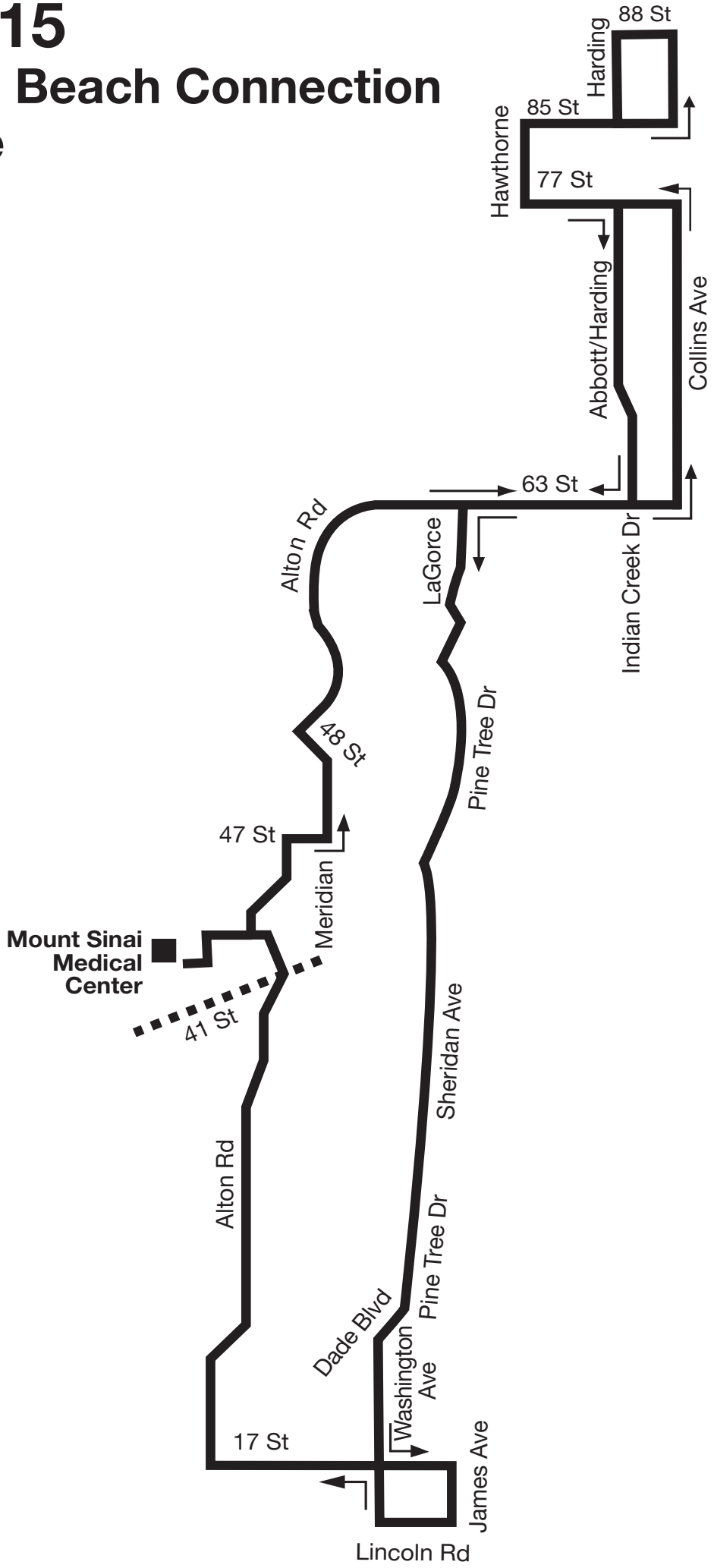
MAP NOT TO SCALE

11.2010

79 Street MAX



Route 115
Mid-North Beach Connection
Clockwise

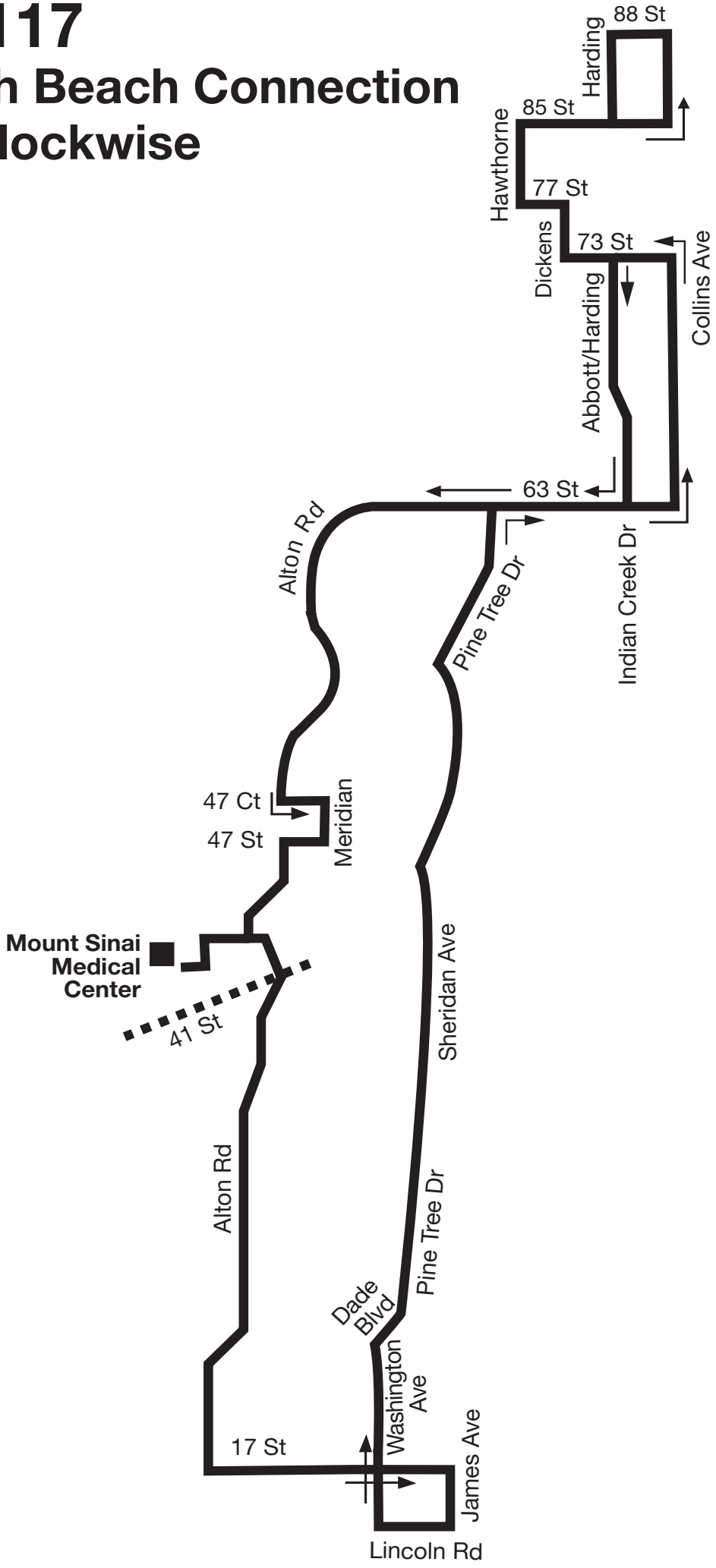


NORTH

MAP NOT TO SCALE

06/2010

Route 117
Mid-North Beach Connection
Counterclockwise

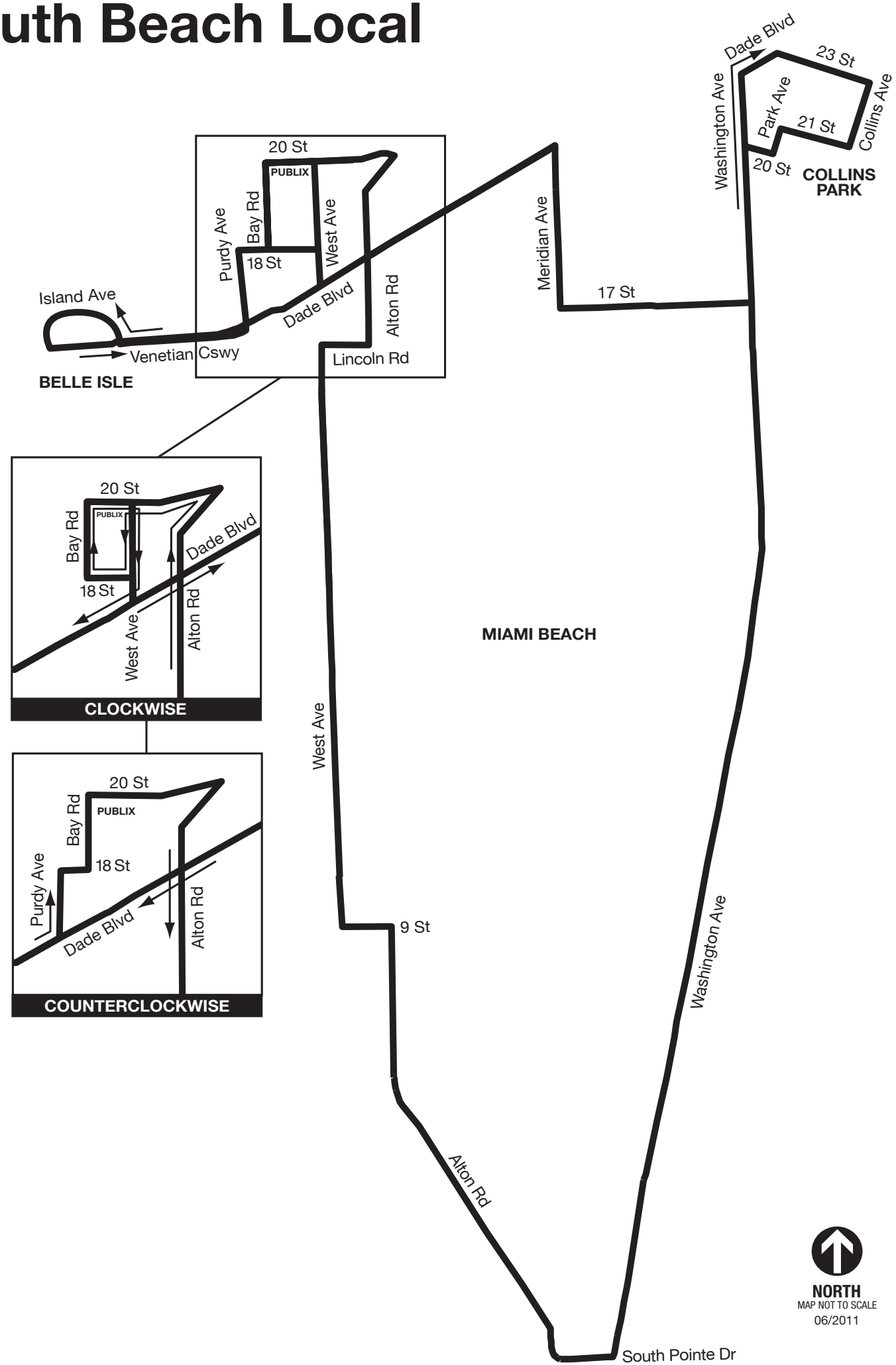


NORTH

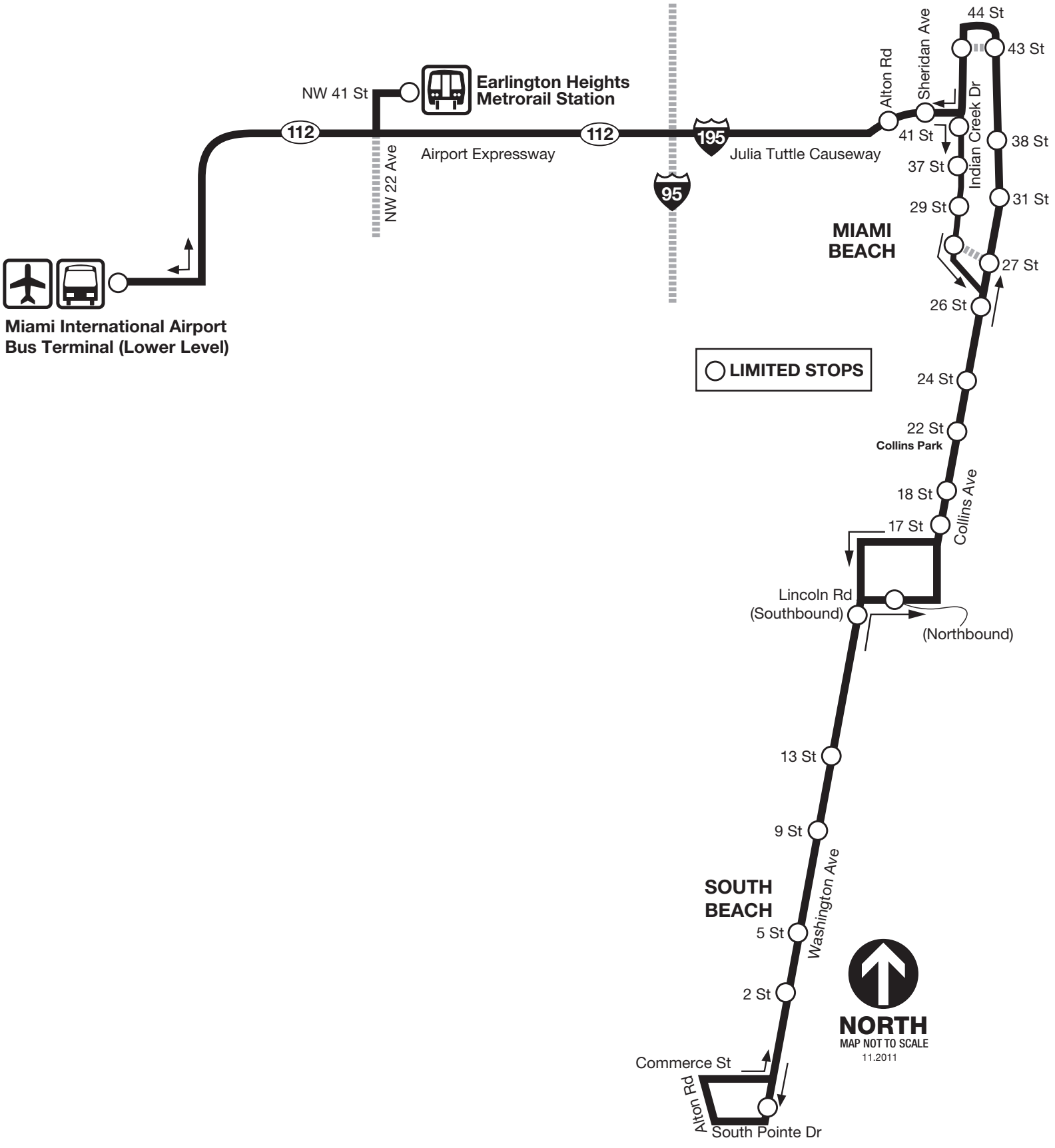
MAP NOT TO SCALE

06/2010

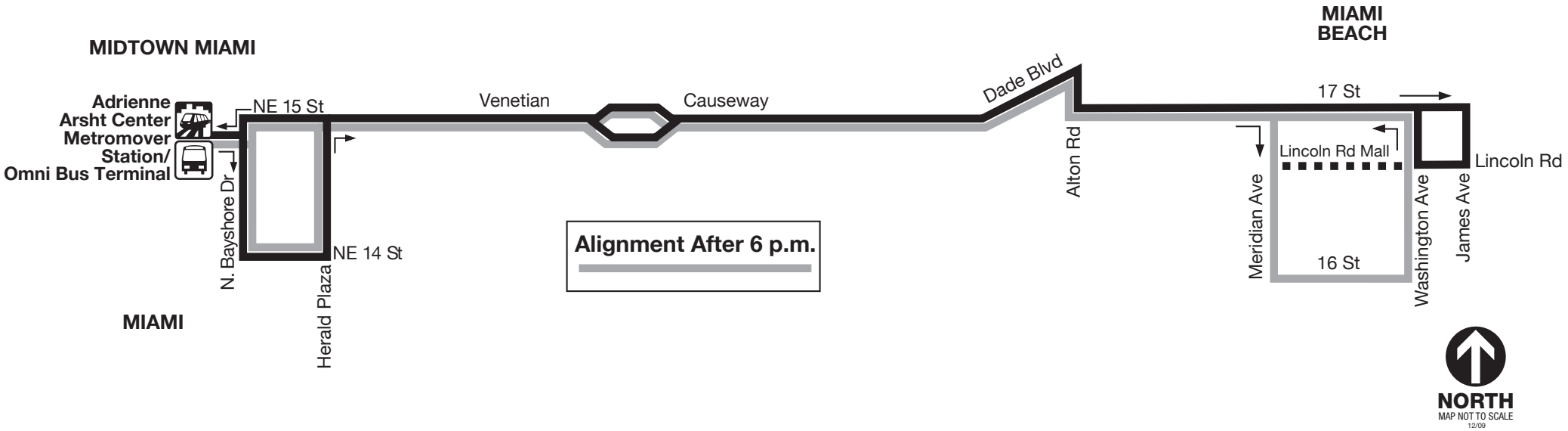
South Beach Local



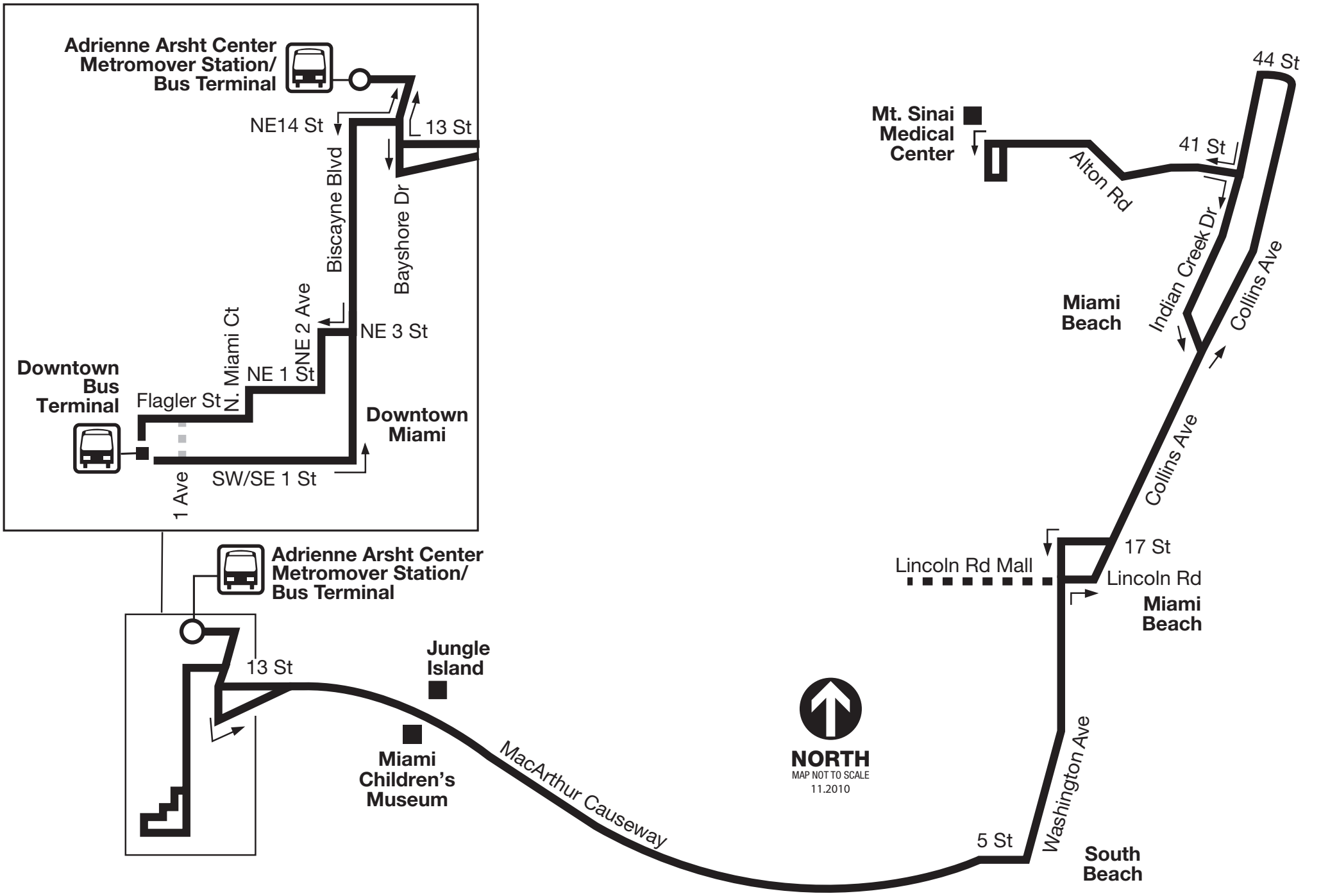
Route 150
Airport Flyer



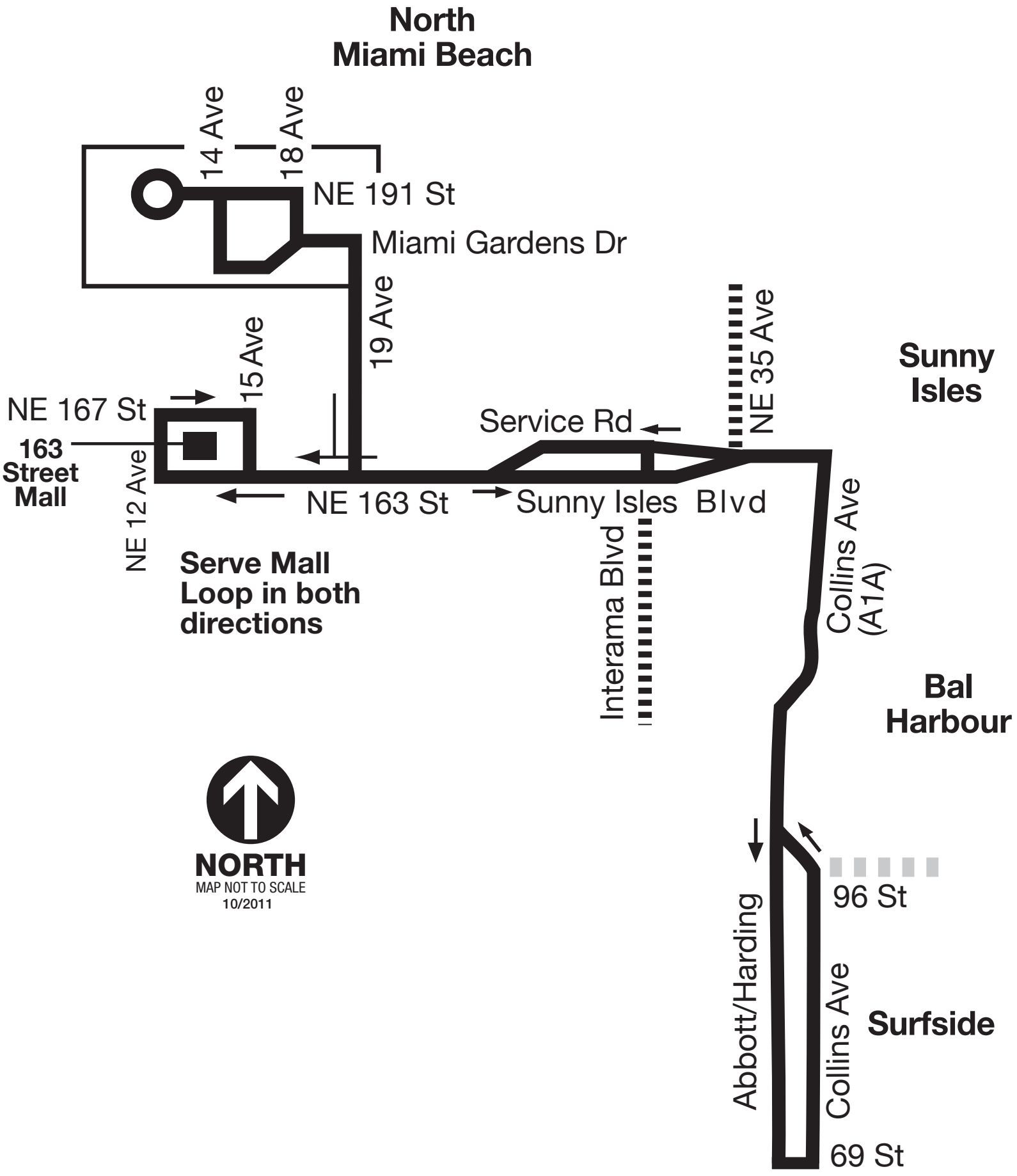
Route A


MIDTOWN MIAMI
MIAMI BEACH
Adrienne Arsht Center Metromover Station/ Omni Bus Terminal
NE 15 St
Venetian
Causeway
Dade Blvd
17 St
Alton Rd
Lincoln Rd Mall
Lincoln Rd
N. Bayshore Dr
NE 14 St
Herald Plaza
Meridian Ave
16 St
Washington Ave
James Ave
Alignment After 6 p.m.
MIAMI
NORTH
MAP NOT TO SCALE
12/09

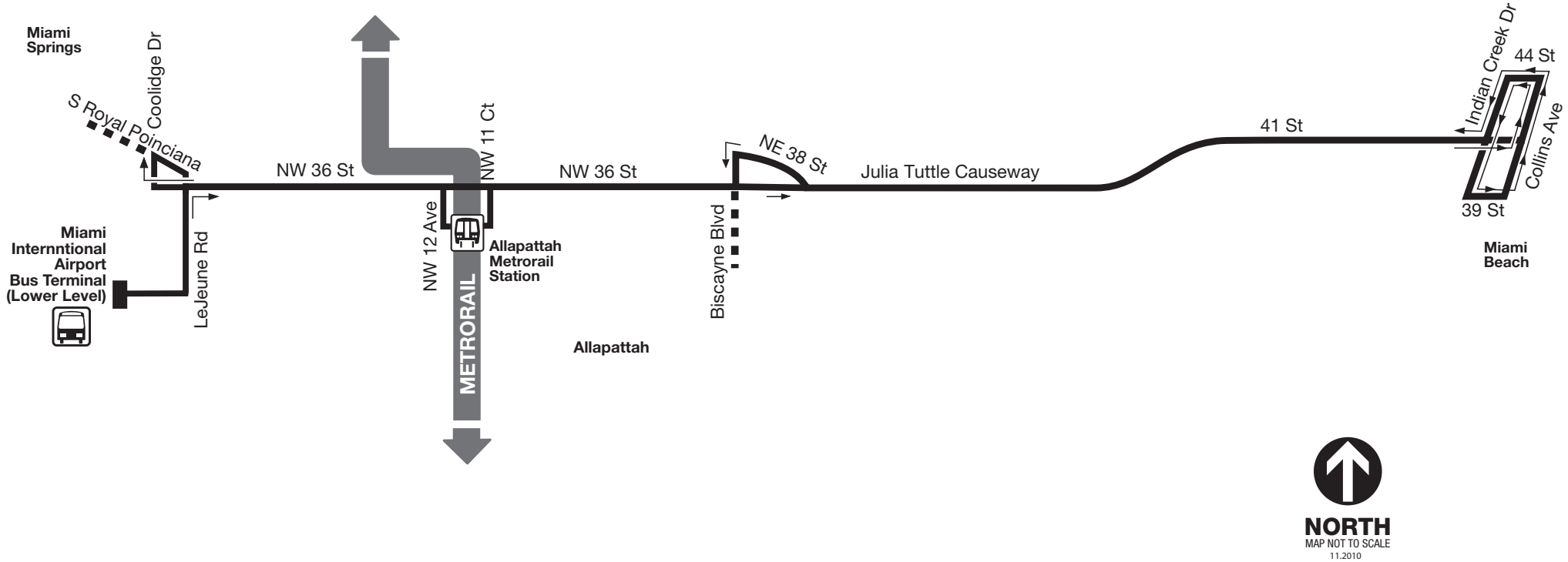
Route C


Adrienne Arsht Center
Metromover Station/
Bus Terminal
NE14 St
13 St
Biscayne Blvd
Bayshore Dr
NE 2 Ave
N. Miami Ct
NE 1 St
NE 3 St
Downtown
Bus
Terminal
Flagler St
Downtown
Miami
1 Ave
SW/SE 1 St
Adrienne Arsht Center
Metromover Station/
Bus Terminal
13 St
Jungle
Island
Miami
Children's
Museum
MacArthur Causeway
NORTH
MAP NOT TO SCALE
11.2010
5 St
Washington Ave
South
Beach
Lincoln Rd Mall
17 St
Lincoln Rd
Miami
Beach
Collins Ave
Collins Ave
Miami
Beach
Indian Creek Dr
41 St
Alton Rd
Mt. Sinai
Medical
Center
44 St

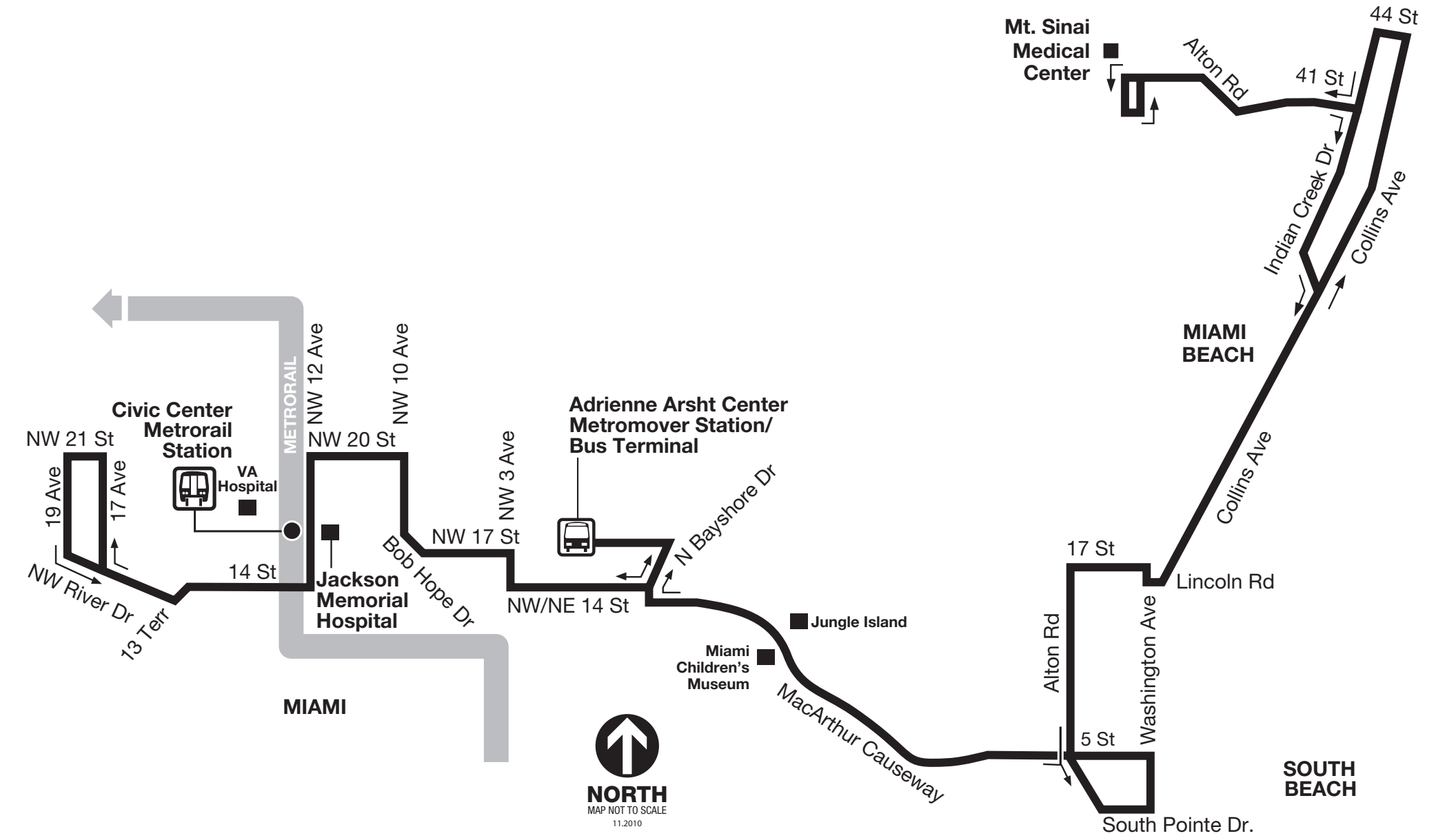
Route H


North
Miami Beach
14 Ave
18 Ave
NE 191 St
Miami Gardens Dr
19 Ave
15 Ave
NE 167 St
163
Street
Mall
NE 12 Ave
Service Rd
NE 35 Ave
Sunny
Isles
NE 163 St
Sunny Isles Blvd
Interama Blvd
Collins Ave
(A1A)
Serve Mall
Loop in both
directions
Bal
Harbour
NORTH
MAP NOT TO SCALE
10/2011
96 St
Abbott/Harding
Collins Ave
Surfside
69 St

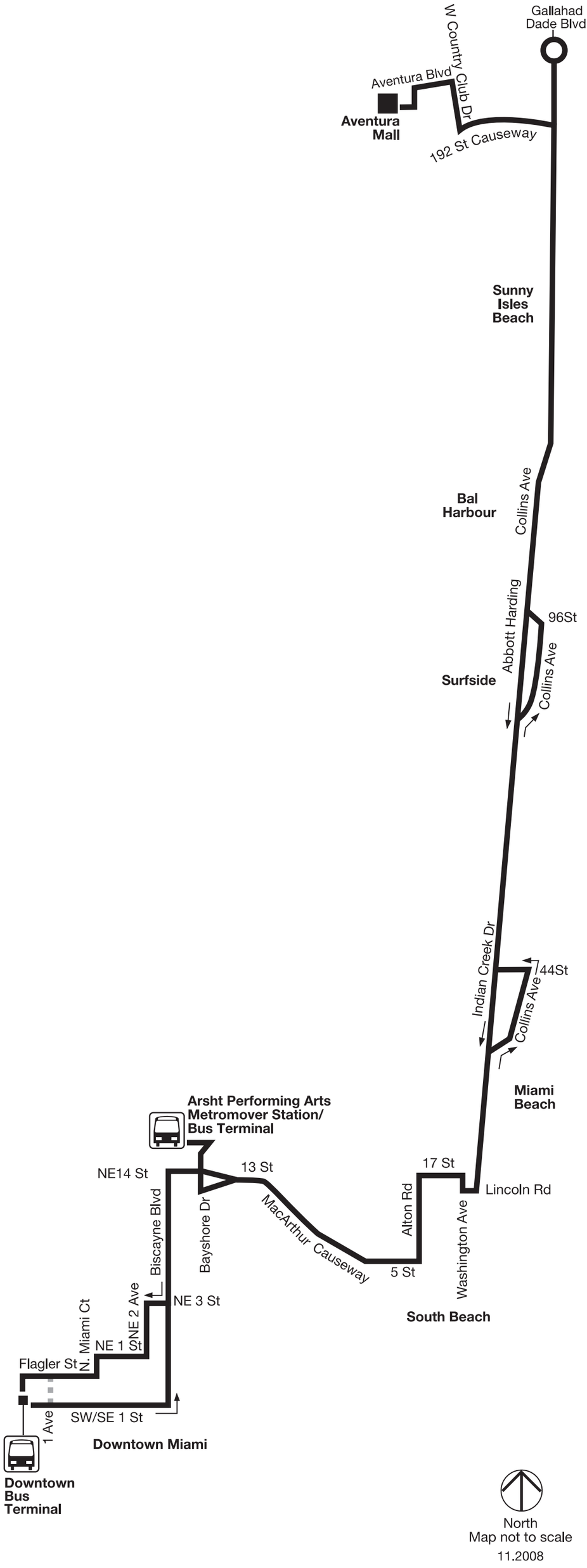
Route J


Miami Springs
Coolidge Dr
S Royal Poinciana
NW 36 St
NW 11 Ct
NW 36 St
NE 38 St
Julia Tuttle Causeway
41 St
Indian Creek Dr
44 St
Collins Ave
39 St
Miami Beach
Miami Internntional Airport Bus Terminal (Lower Level)
LeJeune Rd
NW 12 Ave
Allapattah Metrorail Station
METRORAIL
Biscayne Blvd
Allapattah
NORTH
MAP NOT TO SCALE
11.2010

Route M


Mt. Sinai Medical Center
Alton Rd
44 St
41 St
Indian Creek Dr
Collins Ave
MIAMI BEACH
Collins Ave
17 St
Lincoln Rd
Alton Rd
Washington Ave
5 St
South Pointe Dr.
SOUTH BEACH
MacArthur Causeway
Jungle Island
Miami Children's Museum
NW/NE 14 St
N Bayshore Dr
Adrienne Arsht Center Metromover Station/ Bus Terminal
NW 17 St
NW 3 Ave
NW 10 Ave
NW 12 Ave
METRORAIL
NW 20 St
Bob Hope Dr
Jackson Memorial Hospital
14 St
NW River Dr
13 Terr
19 Ave
17 Ave
NW 21 St
Civic Center Metrorail Station
VA Hospital
MIAMI
NORTH
MAP NOT TO SCALE
11.2010

Route S


Gallahad
Dade Blvd
N Country Club Dr
Aventura Blvd
Aventura
Mall
192 St Causeway
Sunny
Isles
Beach
Bal
Harbour
Collins Ave
Abbott Harding
96St
Surfside
Collins Ave
Indian Creek Dr
44St
Collins Ave
Miami
Beach
Arsht Performing Arts
Metromover Station/
Bus Terminal
NE14 St
13 St
17 St
Lincoln Rd
Biscayne Blvd
Bayshore Dr
MacArthur Causeway
Alton Rd
5 St
Washington Ave
South Beach
NE 3 St
NE 2 Ave
N. Miami Ct
NE 1 St
Flagler St
1 Ave
SW/SE 1 St
Downtown Miami
Downtown
Bus
Terminal
North
Map not to scale
11.2008

Appendix B – Survey Instrument

MIAMIBEACH

North-Middle Beach Transit Study Survey

The City of Miami Beach is evaluating the feasibility of a new City-operated circulator bus route, that would travel east-west along 71st Street and 41st Street, and north-south along A1A between 71st Street and Lincoln Road (see map on back). Your answers to this brief questionnaire will assist in developing and evaluating the best plan for this new bus service.

1. **Place of residence**: Are you a resident of

___ Miami Beach (full time – 6 months or more)
___ Miami Beach (part time – 6 months or less)
___ Miami-Dade County outside Miami Beach
___ Broward or Palm Beach County
___ Visitor/Tourist
(please check only one)

Your home postal zip code: _____

2. **Place of employment**: Do you currently work? __ Within the City of Miami Beach __ Outside the City of Miami Beach Within Miami-Dade County ___ Outside Miami-Dade County ___ Do not work (please check only one)

3. **Most frequent travel destinations**: Do you or will you travel from your place of residence or hotel to destinations on or near the streets identified along the proposed bus route (refer to route map on back)? __ Yes __ No (please check only one)

Please list the name of most frequent destinations, the purpose of the trip (i.e. work place, shopping, social/visit friend or family, meal/dining, medical/health care/dental facility, place of recreation, place of worship, educational institution, other), and the approximate time of day that you travel. Also, please list the primary means of travel (Drive a motor vehicle, Get driven by someone in a motor vehicle, Take a taxi, Take a bus, Ride a bicycle, Walk, Other), frequency of travel (Daily, Several Times a Week, Weekly, Several Times a Month, Infrequently), and the duration of your typical trip to each destination.

Name of Destination	Trip Purpose	Time of Day	Mode of Travel	How Often	Travel Time (minutes)
1 *Movie theater on Lincoln Road*	*Entertainment*	*Early evening*	*Drove*	*Weekly*	*10*
2					
3					
4					

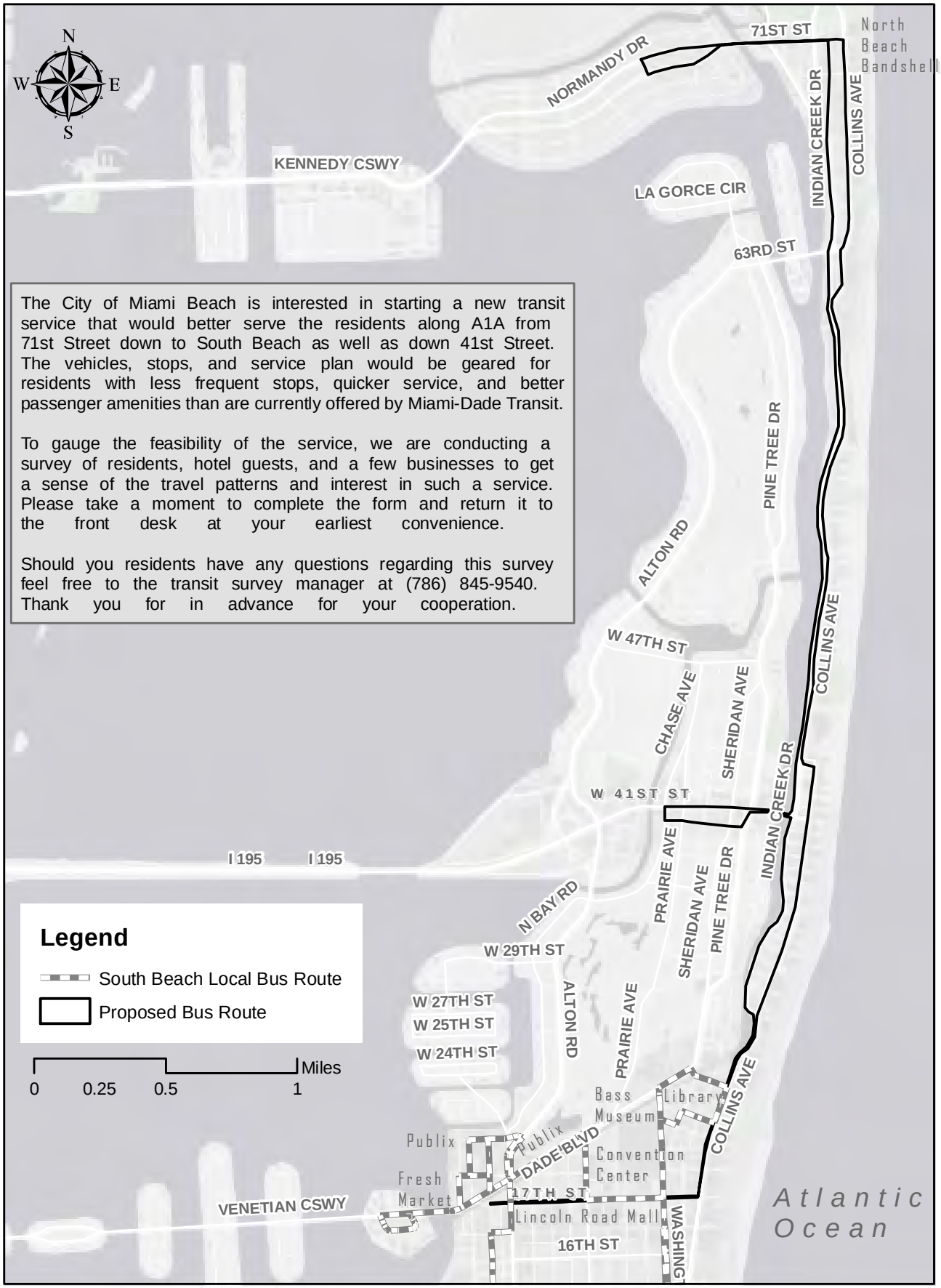
4. **Use of public transit**: Do you or will you use the existing public transit/bus service in Miami Beach?__ Yes __ No (please check only one)
If No, why don't you currently use existing transit service?
__ Too expensive ___ Does not come near where I live ___ Does not go where I need to go ___ Not familiar with existing service
__ Inconvenient because I travel with luggage or other heavy packages ___ Existing service is unreliable ___ Existing service is too slow
___ Existing service is too crowded ___ Existing service is not safe __ Other: _____ (please check all that apply)

How long would you be willing to wait for a bus? _____ (minutes)

How far would you be willing to walk to a bus stop? _____ (minutes)

5. **Your current age is**: _____

6. **Comments**:



The City of Miami Beach is interested in starting a new transit service that would better serve the residents along A1A from 71st Street down to South Beach as well as down 41st Street. The vehicles, stops, and service plan would be geared for residents with less frequent stops, quicker service, and better passenger amenities than are currently offered by Miami-Dade Transit.

To gauge the feasibility of the service, we are conducting a survey of residents, hotel guests, and a few businesses to get a sense of the travel patterns and interest in such a service. Please take a moment to complete the form and return it to the front desk at your earliest convenience.

Should you residents have any questions regarding this survey feel free to the transit survey manager at (786) 845-9540. Thank you for in advance for your cooperation.

Appendix C – Peer System Unit Costs

North/Middle Beach Transit Study

Peer System Costs

Item	Units	Unit Cost	Notes	Source
Capital Costs				
32-foot transit bus	Per vehicle	305,000		City of Hialeah
Two trolley buses	Per year	71,478	Annual lease-to-own payment	City of Doral
One trolley bus	Per year	68,215	Annual lease payment	City of Doral
One trolley bus	Per year	78,886	Annual lease-to-own payment	City of Doral
Office trailer	Per year	3500	For drivers and dispatcher	City of Hialeah
Shelters	Per shelter	0	Under contract from Clear Channel Outdoor Media	City of Hialeah
Benches	Per bench	0	Scott Martin Outdoor	City of Hialeah
Transit techology	Lump sum	30,725	AVL/GPS, IVR, APC,Video Cameras and Trolley Tracker	City of Doral
Operating Costs				
Operations	Per hour	21.24	Drivers, insurance, dispatchers, etc.	City of Hialeah
Operations	Per hour	28.00	251 days/year, 12.5 hours per day, 15-minute daytime headway/ 20-minute evening headway	City of Miami
Operations & Maintenance	Per year	750,000	Rounded estimate	City of Doral
Operations and Maintenance	Per year	459,195	All trolleys	City of Doral
Maintenance	Per year	150,000	Repair and maintenance, tires, preventative maintenance, oil changes, nine vehicles in revenue service	City of Hialeah
Fuel	Per year	262,000	Diesel fuel	City of Hialeah
Fuel	Per gallon	3.76	Budgeted cost	City of Miami
Miscellaneous supplies	Per year	5,000	Maintenance on counting machines	City of Hialeah
Printing Services	Per year	360		City of Doral
Minuteman Press, Inc.	Per year	360		City of Doral
The Printer's Consultant, Inc.	Per year	5,265		City of Doral
Walter Haas Graphics, Inc.	Per year	8,268		City of Doral
Mp2planning, LLC	Doral Trolley Marketing and Communications Plan	1,500		City of Doral
Sign Studio, Inc.	Printing Services	252		City of Doral
Logistical Outsourcing, Inc.	Printing Services	364		City of Doral
Revenue				
Advertising	Per vehicle/month	300		City of Miami

North/Middle Beach Transit Study

Peer System Costs

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Revenue				
Advertising	Per vehicle/month	300		City of Miami

Gannett Fleming

7300 Corporate Center Drive
Suite 701
Miami, FL 33126
t 786-845-9540 | f 786-845-6802